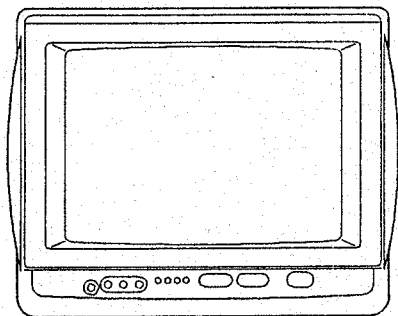


aiwa



TV-C201 TV-C141



COLOR TELEVISION

- TYPE: KER (C141/C201)
KER3 (C201)

SPECIFICATIONS

Category

Color television

Broadcasting color system

BG, DK

Television color system

PAL, SECAM, NTSC^{4.43}, NTSC^{3.58}

Receivable channel

BAND	CHANNEL
VHF-L	R1 - R5, E2 - E4
VHF-H	R6 - R12, E5 - E12
UHF	E21 - 69

Aerial Input

75 ohms, unbalanced

Picture Tube

TV-C141: 14"

TV-C201: 20"

Screen size

TV-C141: 280(W) × 335(D) × 211(H)mm
(11¹/₈ × 13¹/₄ × 8³/₈ in.)

TV-C201: 404(W) × 480(D) × 303(H)mm
(16 × 19 × 12 in.)

Video Input/Output

1 Vp-p, 75 ohms

Audio Input

0.5 Vrms., 33 k ohms more

Audio Output

0.5 Vrms., 2.2 k ohms less

Speaker

TV-C141: 76 mm (3 in.) round

TV-C201: 126 × 76 mm (5 × 3 in.) oval

Operating Voltage

110 - 240 V AC, 50/60 Hz

Power Consumption

TV-C141: 70W

TV-C201: 85W

Earphone jack

Monaural-mini jack

Operating temperature

5°C - 40°C

Operating humidity

35% - 80%

Dimensions

TV-C141: 410(W) × 367(D) × 330(H)mm
(16¹/₄ × 14¹/₂ × 13 in.)

TV-C201: 570(W) × 460(D) × 437(H)mm
(22¹/₂ × 18¹/₈ × 17¹/₄ in.)

Weight

TV-C141: 9.5 kg (19.8 lbs.)

TV-C201: 18 kg (39.6 lbs.)

- Design and specifications are subject to change without notice.

SERVICE MANUAL

NOTICES BEFORE REPAIRING

To make the best use of this equipment, make sure to obey the following items when repairing (or mending).

1. Do not damage or melt the tunicate of the leading wire on the AC1 side, including the power supply code.
2. Do not soil or stain the letters on the spec. inscription plates, notice labels, fuse labels, etc.
3. When repairing the part extracted from the conducted side of the board pattern, fix it firmly with applying bond to the pattern and the part.
4. Restore the following items after repairing.
 - 1) Conditions of soldering of the wires (especially, the distance on the AC1 side).
 - 2) Conditions of wiring, bundling of wires, etc.
 - 3) Types of the wires
 - 4) Attachment conditions of all types of the insulation.

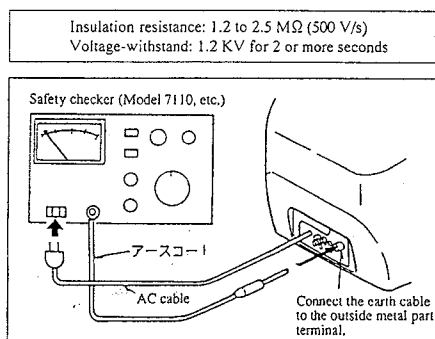


Fig-1

When servicing and checking on the TV side, note the followings.

1. Keep the notices

As for the places which need special attentions, they are indicated with the labels or seals on the cabinet, chassis and parts. Make sure to keep the indications and notices in the operation manual.
2. Avoid an electric shock.

There is a high voltage part inside. Avoid an electric shock while the electric current is flowing.
3. Use the designated parts

The parts in this equipment have the specific characters of incombustibility and withstand voltage for safety. Therefore, the part which is replaced should be used the part which has the same character. Especially as to the important parts for safety which is indicated in the circuit diagram or the table of parts as a Δ mark, the designated parts must be used.
4. Put parts and wires in the original position after assembling or wiring.

There are parts which use the insulation material such as a tube or tape for safety, or which are assembled so that these parts do not contact with the printed board. The inside wiring is designed not to get closer to the

5. After repairing, always measure the insulation resistance and perform the voltage-withstand test (See Fig-1).

- 1) The insulation resistance must be 1.2 to 2.5 MΩ when applying 500 V per second.
- 2) In the voltage-withstand test, apply 1.2 KV for two seconds and check that the GO lamp lights.

* Breaking current set to 10 mA.

* Connect the safety checker as shown in Fig-1, then measure the resistance and perform the test.

* Do not touch the equipment during testing.

* For details of the safety checker, refer to the supplied operation manual.

6. General notices when repairing mechanism

- 1) Dirt on the head causes deterioration of the picture quality, distortion of sound and the irregular rotation. Make sure to clean the "Head, Rotating", "Head, CTL", "Head, Erasing", "Roller, Pinch" and "Capstan" with alcohol.
- 2) Note that if oil or grease sticks to the rotating part (the surfaces of the rubber and transporting tape) such as the belt, capstan, roller, pinch, etc. it will cause slipping or abnormal function.
- 3) When removing "Ring, E", "Washer, Slider", etc which attach parts, replace them with new ones. Do not use them again.
- 4) Make sure to use the regular parts for repairing this equipment. And do not use the parts that cannot be used as the common using part, or the remodeled parts, because these parts cause abnormal functions of mechanism and damage.

pyrogenic parts and high voltage parts. Therefore, put these parts in the original positions.

5. Take care of the cathode-ray tube.

By setting an explosion-proof cathode-ray tube is set in this equipment, safety is secured against implosion. However, when removing it or serving from backward, it is dangerous to give a shock. Take enough care to deal with it.

6. Avoid an X-ray.

Safety is secured against an X-ray by considering about the cathode-ray tube and the high voltage peripheral circuit, etc. Therefore, when repairing the high voltage peripheral circuit, use the designated parts and do not change the circuit. Repairing except indicates causes rising of high voltage, and the cathode-ray tube emits an X-ray.

7. Perform a safety check after servicing.

Confirm that the screws, parts and wiring which were removed in order to service are put in the original positions, or whether there are the portions which are deteriorated around the places serviced.

DISASSEMBLY INSTRUCTIONS

1. HIGH-VOLTAGE CAP (ANODE CAP) REMOVAL

1-1. Cautions before Removing

Discharge the anode voltage

- (1) The anode voltage is not discharged completely from the CRT of this unit even after the power is turned off. Be sure to discharge the residual anode voltage before removing the anode cap.

Do not use pliers

- (2) Do not use pliers, etc. to remove the anode cap. If you used pliers and bent the hook to remove the cap, the spring characteristics of the hook could be lost, and when reinstalled, the cap would come off from the CRT anode button easily, causing an accident.

Do not turn the anode cap

- (3) If the anode cap is turned in the direction of its circumference, the hook is likely to come off.

1-2. Anode Cap Removal

Discharge the anode voltage. (See Figure 1)

- (1) Connect a flat-bladed screwdriver to the CRT GND via an alligator clip.
- (2) Use a tester to check the end of the screwdriver and ground of the TV for continuity.
- (3) Touch the hook with the end of the screwdriver.

Caution : Be careful not to damage the anode cap.
- (4) Turn over the anode cap. (See Figure 2)

Caution : Be Careful not to damage the anode cap.
- (5) Push the anode cap with your thumb in the direction of arrow ① as shown in the figure, then lift the cap in the direction of arrow ② to release the hook on one side. (See Figure 3)
- (6) Turn over the anode cap on the side where the hook was released and pull out the cap in the direction opposite to that in which the cap was pushed. (See Figure 4)

Caution : Do not pull out the anode cap straight up.

: Do not pull the cap forcibly. After removing the cap, check that the hook is not deformed.

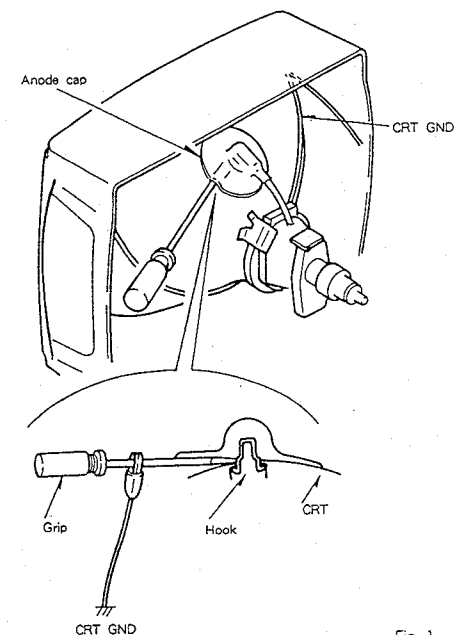


Fig. 1

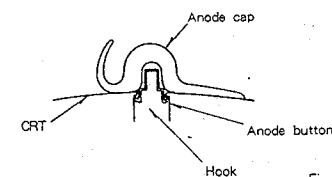


Fig. 2

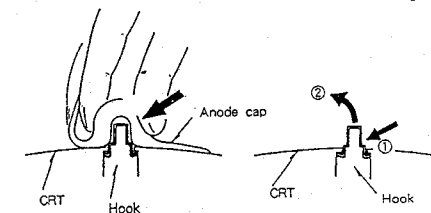


Fig. 3

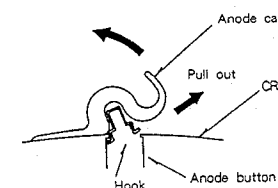


Fig. 4

2. ANODE CAP REINSTALLATION

Observe the cautions carefully so that no accident occurs due to a defect in installing the anode cap and so it does not come off.

2-1. Cautions before Reinstalling

Never turn the anode cap after installing it

Never re-use the hook when it has been deformed

- (1) If the anode cap is turned after it is installed, it may come off. Therefore, arrange the high-voltage cable before attaching the anode cap. (See Figure 1)
- (2) If you have attached the anode cap before arranging the high-voltage cable, arrange the cable carefully so the cap does not turn.

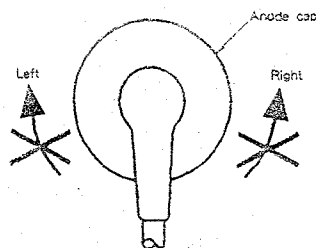
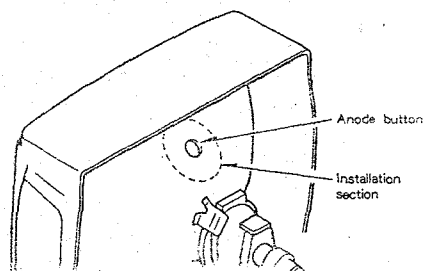


Fig. 1

2-2. Anode cap reinstatement

- (1) Use a clean cloth moistened slightly with alcohol to clean the installation section. (See Figure 2)
- Caution: Check that the installation section is free from dust, foreign matter, etc.
- (2) Coat the anode cap installation circumference with an appropriate amount of the specified silicone grease (KS-650N). (See Figure 2)

Caution: Be careful of silicone grease.



- (4) Turn over the rubber cap symmetrically on the left and right. (See Figure 4)

Caution: Turn over the rubber cap symmetrically on the left and right.

: Take great care not to damage the anode cap.

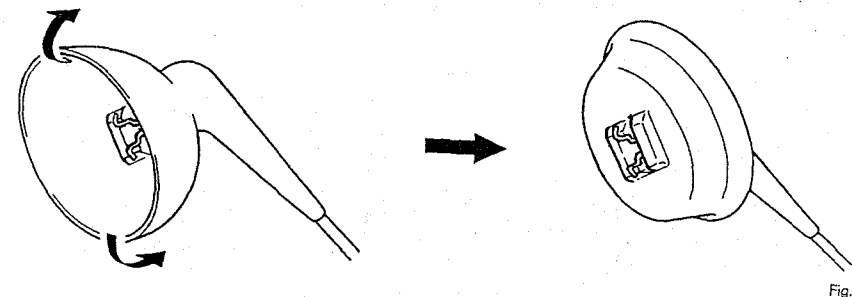


Fig. 4

- (5) Fit your forefinger over the projection at the center of the cap and hold the cap between your thumb and middle finger. (See Figure 5-1)

- (6) Apply the hook on one side to the anode button as shown in the figure. (See Figure 5-2)

Caution: Check that the hook is held securely.

- (7) Apply the hook on the other side to the anode button as shown in Figure 5-3.

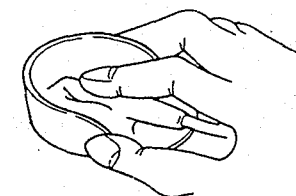


Fig. 5-1

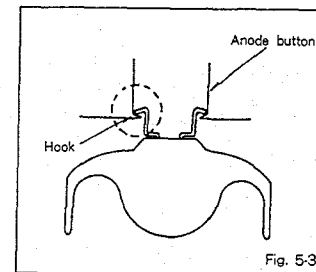
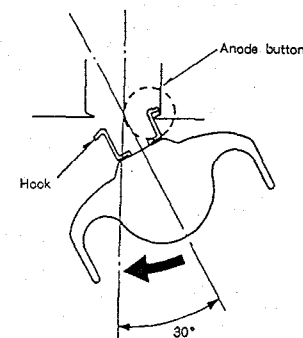


Fig. 5-3

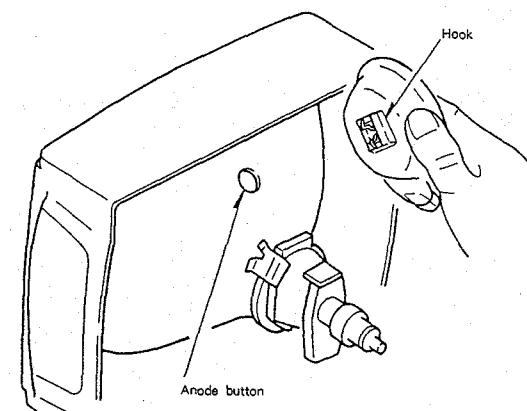


Fig. 5-2

- (8) Pull the anode cap slightly with the rubber cap turned over and visually check that the hook is engaged securely.

- (9) Release your hand from the rubber cap of the anode cap.

Caution: Cover the anode cap so that it does not lift.

- (10) Hold the skirt of the anode cap slightly to improve the close contact between the cap and CRT.

- (11) Check that the anode cap is in close contact with the CRT. (See Figure 6)

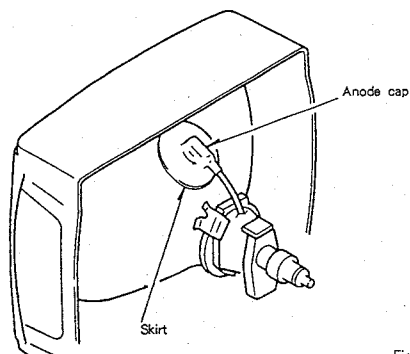


Fig. 6

3. CASE REMOVAL

3-1. Rear Cabinet Removal (See Figure 1)

- (1) Remove four screws ① and three screws ②, then remove the rear cabinet in the direction of the arrow.

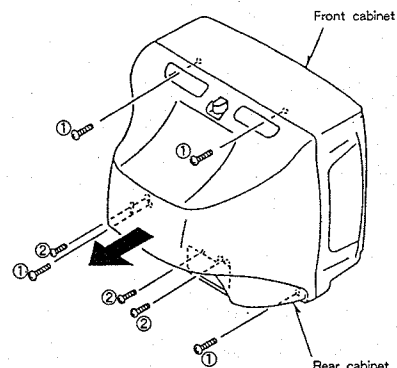


Fig. 1

3-2. Neck C. B. (PWB, NK) Removal (See Figure 2)

- (1) Disconnect CN553 (CRT GND).
(2) Remove the Neck C.B. in the direction of arrow ①.

3-3. Main C. B. (PWB, MAIN) Removal (See Figure 2)

- (1) Disconnect the GND wire from the speaker grille (arrow ②).
(2) Remove speakers (L, R) in the direction of arrows ③.
(3) Pull out the Main C. B. in the direction of arrow ④.

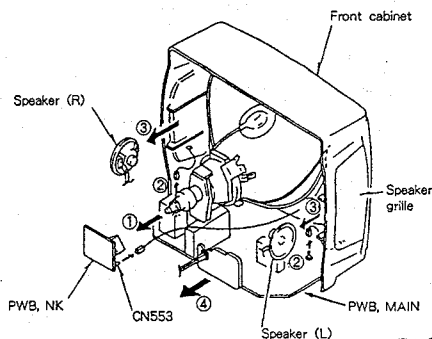


Fig. 2

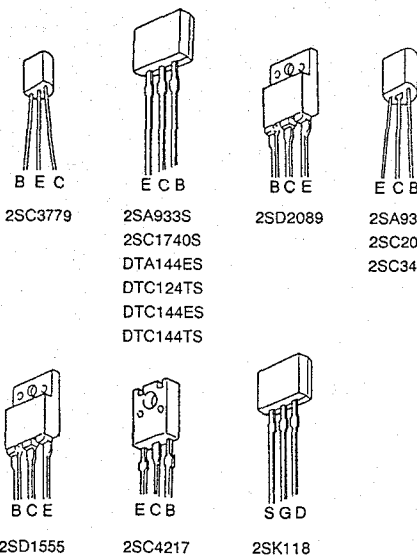
ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は“REFERENCE NAME LIST”を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO.	PART NO.	カナ NO.	DESCRIPTION	REF. NO.	PART NO.	カナ NO.	DESCRIPTION
IC							
	84-LB3-648-010		IC, TMP47C837N-U411	C15	87-018-109-080		CAP, TC-U 22P-50 SL
	87-070-113-010		IC, MN1280R	C16	87-018-109-080		CAP, TC-U 22P-50 SL
	87-002-858-010		IC, CAT93C46YP	C19	87-010-404-080		CAP, E 4.7-50 SME
	87-017-957-010		IC, SXK1790-S2	C20	87-018-134-080		CAP, TC-U 0.01-16 Y
	87-002-378-080		IC, L5631	C21	87-010-248-080		CAP, E 220-10 SME
	87-020-396-010		IC, LA7910	C22	87-010-400-080		CAP, E 0.47-50 SME
	87-070-114-010		IC, LA7530N	C23	87-010-401-080		CAP, E 1-50 SME
	87-070-080-010		IC, TA8759BN	C24	87-010-401-080		CAP, E 1-50 SME
	87-017-956-010		IC, BA7611AN	C25	87-010-404-080		CAP, E 4.7-50 SME
	87-070-117-010		IC, AN5265	C26	87-010-404-080		CAP, E 4.7-50 SME
	87-020-291-010		IC, BA3812L	C27	87-010-401-080		CAP, E 1-50 SME
	87-027-656-010		IC, TC4066BP	C28	87-010-404-080		CAP, E 4.7-50 SME
	87-070-116-010		IC, TA8403K	C29	87-010-404-080		CAP, E 4.7-50 SME
	87-020-881-080		IC, NJM78105A	C30	87-018-134-080		CAP, TC-U 0.01-16 Y
	87-070-102-010		IC, STR58041A	C31	87-010-404-080		CAP, E 4.7-50 SME
	87-001-576-010		IC, NJM7812FA	C32	87-018-134-080		CAP, TC-U 0.01-16 Y
				C33	87-010-260-080		CAP, E 47-25 SME
TRANSISTOR							
	87-026-462-080		TR, 2SC1740S (RS)	C101	87-010-404-080		CAP, E 4.7-50 SME
	87-026-463-080		TR, 2SA933S (RS)	C103	87-010-404-080		CAP, E 4.7-50 SME
	87-026-650-080		TR, DTC124TS	C104	87-010-401-080		CAP, E 1-50 SME
	87-026-502-080		TR, DTC144 TS	C105	87-010-404-080		CAP, E 4.7-50 SME
	89-337-794-580		TR, 2SC3779 D/E	C106	87-010-544-080		CAP, E 0.1-50
	87-026-219-080		TR, DTA144ES	C107	87-010-101-080		CAP, E 220-16 SME
	87-026-218-080		TR, DTC144ES	C109	87-018-119-080		CAP, TC-U 100P-50 B
	89-501-185-080		TR, 2SK118 GR	C113	87-010-404-080		CAP, E 4.7-50 SME
	89-334-674-580		TR, 2SC3467 D/E	C115	87-010-381-080		CAP, E 330-16 SME
	89-342-174-510		TR, 2SC4217 D/E<201>	C201	87-018-134-080		CAP, TC-U 0.01-16 Y
	89-415-550-010		TR, 2SD1555<201>	C202	87-018-134-080		CAP, TC-U 0.01-16 Y
	89-420-890-010		TR, 2SD2089<141>	C203	87-018-134-080		CAP, TC-U 0.01-16 Y
	89-320-610-080		TR, 2SC2061	C204	87-018-104-080		CAP, TC-U 10P-50 SL
	89-109-350-080		TR, 2SA935	C205	87-018-109-080		CAP, TC-U 22P-50 SL
				C208	87-018-131-080		CAP, TC-U 1000P-50 B
				C209	87-010-400-080		CAP, E 0.47-50 SME
				C210	87-018-134-080		CAP, TC-U 0.01-16 Y
				C211	87-018-134-080		CAP, E 0.01-16 Y
DIODE							
	87-017-437-080		DIODE, 1N4148M	C212	87-018-134-080		CAP, TC-U 0.01-16 Y
	87-070-033-080		ZENER, UZ7.5 BS	C216	87-010-260-080		CAP, E 47-25 SME
	87-070-034-080		ZENER, UZ9.1 BS	C217	87-018-134-080		CAP, TC-U 0.01-16 Y
	87-017-436-080		ZENER, UZ-4.7BSA	C218	87-018-113-080		CAP, TC-U 33P-50 SL
	87-002-654-080		DIODE, S5566B	C219	87-018-109-080		CAP, TC-U 22P-50 SL
	87-017-963-080		DIODE, TVR5G	C220	87-018-111-080		CAP, TC-U 27P-50 SL
	87-017-964-080		DIODE, EM2B	C221	87-018-134-080		CAP, TC-U 0.01-16 Y
	87-017-962-080		DIODE, 1JH45	C301	87-018-122-080		CAP, TC-U 180P-50 B
	87-070-032-080		ZENER, UZ6.2BS	C302	87-018-122-080		CAP, TC-U 180P-50 B
	87-070-111-060		DIODE, RU30A	C303	87-018-122-080		CAP, TC-U 180P-50 B
	87-070-112-060		DIODE, RU4YX	C306	87-010-406-080		CAP, E 22-50 SME
	87-017-354-080		DIODE, RU3	C307	87-018-134-080		CAP, TC-U 0.01-16 Y
	87-070-119-080		DIODE, R2M	C309	87-018-134-080		CAP, TC-U 0.01-16 Y
				C310	87-018-134-080		CAP, TC-U 0.01-16 Y
				C311	87-018-134-080		CAP, TC-U 0.01-16 Y
MAIN C. B.							
BT401	84-LB3-697-010		CONN ASSY, 5P TT-1	C312	87-010-402-080		CAP, E 2.2-50 SME
BT402	84-LB3-697-010		CONN ASSY, 5P TT-1	C313	87-018-134-080		CAP, TC-U 0.01-16 Y
C1	87-010-405-080		CAP, E 10-50 SME	C314	87-018-122-080		CAP, TC-U 180P-50 B
C2	87-010-405-080		CAP, E 10-50 SME	C315	87-018-107-080		CAP, TC-U 18P-50 SL
C3	87-018-119-080		CAP, TC-U 100P-50 B	C316	87-018-131-080		CAP, TC-U 1000P-50 B
C4	87-010-403-080		CAP, E 3.3-50 SME	C320	87-010-529-080		CAP, E 1-50 HP
C5	87-018-123-080		CAP, TC-U 220P-50 B	C327	87-010-101-080		CAP, E 220-16 SME
C6	87-018-123-080		CAP, TC-U 220P-50 B	C328	87-018-200-080		CAP, TC-U 3900P-16X<201>
C7	87-018-123-080		CAP, TC-U 220P-50 B	C328	87-018-198-080		CAP, TC-U 2700P-16 X<141>
C8	87-018-123-080		CAP, TC-U 220P-50 B	C329	87-010-400-080		CAP, E 0.47-50 SME<141>
C9	87-018-123-080		CAP, TC-U 220P-50 B	C329	87-010-401-080		CAP, E 1-50 SME<201>
C10	87-018-123-080		CAP, TC-U 220P-50 B	C330	87-018-123-080		CAP, TC-U 220P-50 B
C11	87-018-123-080		CAP, TC-U 220P-50 B	C332	87-010-403-080		CAP, E 3.3-50 SME
C12	87-010-400-080		CAP, E 0.47-50 SME	C335	87-010-405-080		CAP, E 10-50 SME
C13	87-010-400-080		CAP, E 0.47-50 SME	C336	87-018-134-080		CAP, TC-U 0.01-16 Y
C14	87-018-109-080		CAP, TC-U 22P-50 SL	C344	87-010-400-080		CAP, E 0.47-50 SME
				C347	87-010-404-080		CAP, E 4.7-50 SME
				C348	87-018-134-080		CAP, TC-U 0.01-16 Y
				C349	87-018-134-080		CAP, TC-U 0.01-16 Y
				C350	87-018-118-080		CAP, TC-U 82P-50 B

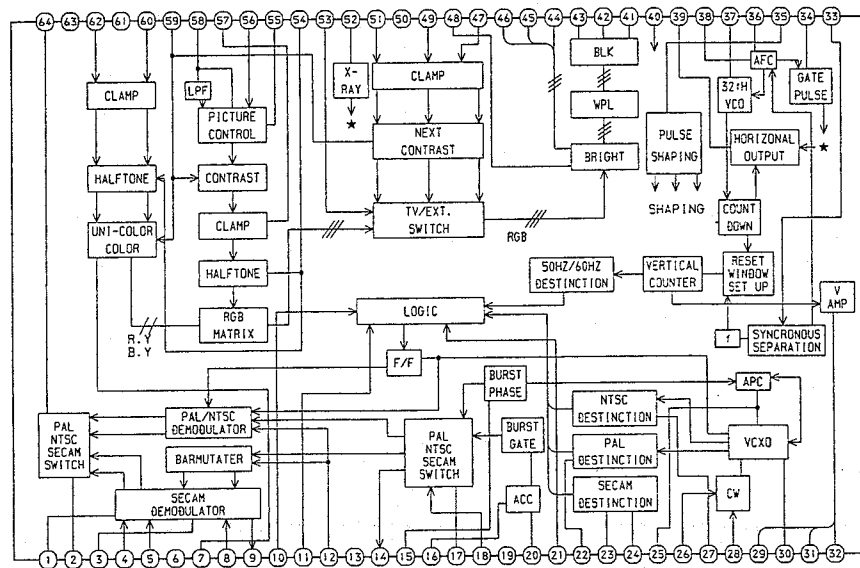
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C351	87-010-401-080		CAP,E 1-50 SME	C817	87-010-976-080		CAP,CER 1000P-500 B	R110	87-022-654-060		RES,M/O 10K-1W J	R551	87-025-590-060		RES,M/O 15K-2W J<201>
C352	87-010-404-080		CAP,E 4.7-50 SME	C818	87-016-549-090		CAP,E 330-160	R423	87-025-575-060		RES,CEM 2.7-5W J	R552	87-025-577-060		RES,M/O 15K-1W J<141>
C354	87-018-134-080		CAP,TC-U 0.01-16 Y	C819	87-016-299-080		CAP,E 10-100 SME	R436	87-029-160-060		RES,FUSE 2.2-1WJ	R552	87-025-590-060		RES,M/O 15K-2W J<201>
C356	87-018-122-080		CAP,TC-U 180P-50 B	C820	87-010-976-080		CAP,CER 1000P-500 B	R608	87-025-598-010		RES,CEM 2.2K-5W J<141>	R553	87-025-577-060		RES,M/O 15K-1W J<141>
C358	87-018-119-080		CAP,TC-U 100P-50 B	C821	87-010-388-080		CAP,E 1000-25 SME	R608	87-025-584-010		RES,CEM 3.3K-5W J<201>	R553	87-025-590-060		RES,M/O 15K-2W J<201>
C361	87-010-384-080		CAP,E 100-25 SME	C822	87-010-384-080		CAP,E 100-25 SME	R617	87-025-490-080		RES,NF 0.47-1/4W<141>	SFR551	87-024-522-080		SFR,4.7K DIA6 V NTP
C362	87-010-544-080		CAP,E 0.1-50<141>	C823	87-010-976-080		CAP,CER 1000P-500 B	△R801	87-025-585-010		RES,CEM 2.7-5W J	SFR552	87-024-522-080		SFR,4.7K DIA6 V NTP
C362	87-010-400-080		CAP,E 0.47-50 SME<201>	C824	87-010-389-090		CAP,E 2200-25 SME	△R802	87-023-102-080		RES,SD 4.7M 1/2W SF	SFR553	87-024-522-080		SFR,4.7K DIA6 V NTP
C363	87-010-221-080		CAP,E 470-10	C825	87-010-405-080		CAP,E 10-50 SME	R804	87-023-573-060		RES,M/O 0.33-1W J<201>	SFR554	87-024-519-080		SFR,470 DIA6 V NTP
C364	87-010-400-080		CAP,E 0.47-50 SME<201>	C826	87-010-405-080		CAP,E 10-50 SME	R804	87-022-621-060		RES,M/O 0.39-1W J<141>	SFR555	87-024-519-080		SFR,470 DIA6 V NTP
C364	87-010-405-080		CAP,E 10-50 SME<141>	C827	87-010-405-080		CAP,E 10-50 SME	R805	87-025-573-060		RES,M/O 0.33-1W J<201>	S0551	84-LB2-610-010		SOCKET,CRT HPS0360<201>
C365	87-010-400-080		CAP,E 0.47-50 SME<201>	C829	87-016-322-080		CAP,E 1-250 SME	R805	87-022-621-060		RES,M/O 0.39-1W J<141>	S0551	84-LB3-610-010		SOCKET,CRT HPS1171<141>
C365	87-010-405-080		CAP,E 10-50 SME<141>	C830	87-012-386-080		CAP,CER 470P-2K BN	R806	87-029-154-060		RES,FUSE 33-1/4WJ	V551	84-LB3-601-010		CRT,A34KU02XXA1<141>
C366	87-016-100-080		CAP,E 10-50 BP	C831	87-016-373-080		CAP,E 10-250	R810	87-025-576-060		RES,M/O 68-1W J	V551	84-LB2-601-010		CRT,A48KV220X30<201>
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C373	87-018-115-080		CAP,TC-U 47P-50 SL	△CD801	87-034-686-110		AC CORD SET,E	R815	87-029-162-060		RES,FUSE 22-1W J				
C374	87-018-134-080		CAP,TC-U 0.01-16 Y	CF201	87-008-563-080		FLTR,CDAS.5K2C6	R818	87-029-165-060		RES,FUSE 2.7-1WJ				
C375	87-018-134-080		CAP,TC-U 0.01-16 Y	CF202	87-008-564-080		FLTR,CDAS.5K2C6	R819	87-029-168-060		RES,FUSE 100-1/2W J				
C376	87-018-134-080		CAP,TC-U 0.01-16 Y	CF203	87-008-575-080		FLTR,SFHS5.5MBC	R820	87-029-172-060		RES,FUSE 15-1/2WJ				
C377	87-010-260-080		CAP,E 47-25 SME	CF204	87-008-576-080		FLTR,SFHS6.5MBC	R821	87-029-170-060		RES,FUSE 3.9-1WJ				
C378	87-018-129-080		CAP,TC-U 680P-50 B	CF205	87-008-577-080		FLTR,TPS5.5MB2	R822	87-022-623-060		RES,M/O 15-2W J				
C399	87-018-209-080		CAP,TC-U 0.1-50 F	CF206	87-008-578-080		FLTR,TPS6.5MB2	RN1	87-022-618-010		ARRAY,R 22KX7 J RGL				
C401	87-010-260-080		CAP,E 47-25 SME	CON301	84-LB3-691-010		CONN ASSY,5P TN-2<141>	RN2	87-022-617-010		ARRAY,R 22KX4 J RGL				
C402	87-010-404-080		CAP,E 4.7-50 SME	CON301	84-LB2-631-010		CONN ASSY,5P TN-4<201>	RN3	87-022-617-010		ARRAY,R 22KX4 J RGL				
C403	87-010-387-080		CAP,E 470-25 SME	D5	87-070-110-010		LED,SLP-181B-51	SF201	87-008-579-010		FLTR,SAW F1036HS				
C404	87-010-384-080		CAP,E 100-25 SME	DL301	84-LB3-638-010		DL,ADL-CP144E	SFR1	87-024-175-080		SFR,47K DIA6 V				
C405	87-010-260-080		CAP,E 47-25 SME	DL302	82-JT2-612-010		DELAY L,Y 400NS	SFR2	87-024-176-080		SFR,100K DIA6 V				
C407	87-018-134-080		CAP,TC-U 0.01-16 Y	△F801	87-035-457-010		FUSE,3.15A 250V TW/C	SFR201	87-024-172-080		SFR,10K DIA6 V				
C408	87-010-237-080		CAP,E 1000-16	△F801	87-003-223-080		FERRITE BEAD BL02RN2	SFR301	87-024-168-080		SFR,1K DIA6 V				
C409	87-010-237-080		CAP,E 1000-16	△F801	87-033-213-080		CLAMP,FUSE SMK	SFR302	87-024-167-080		SFR,47K DIA6 V				
C416	87-018-127-080		CAP,TC-U 470P-50 B	△F802	87-033-213-080		CLAMP,FUSE SMK	SFR501	87-024-175-080		SFR,47K DIA6 V				
C417	87-010-405-080		CAP,E 10-50 SME	FL301	84-LB3-668-010		FLTR,SECAM DET	SP401	84-LB3-641-010		SP,F DIA 7.6<141>				
C418	87-010-384-080		CAP,E 100-25 SME	FL302	84-LB3-668-010		FLTR,SECAM DET	SP402	84-LB2-625-010		SP,F DIA 7.6<141>				
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C428	87-018-205-080		CAP,TC-U 0.022-25 F	IC802	87-026-590-010		P-TR PC111 YF	SW2	87-036-267-080		SW,TACT SKHVBK				
C429	87-010-405-080		CAP,E 10-50 SME	△ICP801	83-203-688-080		IC,ICP-N25	SW3	87-036-267-080		SW,TACT SKHVBK				
C431	87-010-405-080		CAP,E 10-50 SME	△ICP802	87-001-132-080		IC,ICP-N38 TI04	SW4	87-036-267-080		SW,TACT SKHVBK				
C433	87-010-405-080		CAP,E 10-50 SME	J301	87-099-638-010		JACK,PIN JPJ1023 YEL	SW5	87-036-267-080		SW,TACT SKHVBK				
C501	87-018-127-080		CAP,TC-U 470P-50 B	J302	87-099-690-010		JACK,PIN YK21-2701	SW6	87-036-267-080		SW,TACT SKHVBK				
C502	87-018-134-080		CAP,TC-U 0.01-16 Y	J401	87-099-705-010		JACK,PIN JPJ1023 BLK	SW7	87-036-267-080		SW,TACT SKHVBK				
C503	87-010-405-080		CAP,E 10-50 SME	J402	87-009-217-010		JACK,DIA3.5	SW8	87-036-267-080		SW,TACT SKHVBK				
C507	87-018-123-080		CAP,TC-U 220P-50 B	L1	84-LB3-664-010		COIL,390H OSD OSC	SW301	87-036-266-010		SW,SLIDE SSSFO22				
C508	87-018-131-080		CAP,TC-U 1000P-50 B	L101	87-005-477-080		COIL,22UH FLR50 J	△SW801	87-036-381-010		SW,PUSH POWER 1-3-1				
C509	87-010-247-080		CAP,E 100-50 SME	L102	87-005-473-080		COIL,10UH J FLR50	△T601	84-LB3-651-010		TRANS,HD MS-101N				
C510	87-010-394-080		CAP,E 220-35 SME	L203	87-003-098-080		COIL,2.2UH	△T602	84-LB3-606-010		FBT,HFL1427G<141>				
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C514	87-010-401-080		CAP,E 1-50 SME	L205	84-LB3-667-010		COIL,V DET	△T801	84-LB3-656-010		PT,KER				
C605	87-016-488-010		CAP,M/PP 0.47-200 J	L206	87-003-145-080		COIL,8.2UH LAL02	TC301	87-011-244-080		TRIMMER,10P VCT54				
C606	87-016-357-010		CAP,PP 0.01-1250	L207	87-003-102-080		COIL,10UH	△T801	87-026-665-010		THMS,PA4A5180B270				
C607	87-012-406-080		CAP,CER 2200P-2K BN<201>	L208	87-003-146-080		COIL,15UH	TU101	84-LB3-624-010		UNIT,TU ENV7957P2				
C607	87-012-399-080		CAP,CER 1500P-201J3>	L209	87-003-285-080		COIL,39UH LAL02	X1	87-008-394-080		CP CST 4.19 MCM				
C608	87-010-405-080		CAP,E 10-50 SME	L210	87-003-281-080		COIL,3.9UH LAL02	X301	82-JT2-615-080		VIB,XTAL 4.43M				
△C801	87-016-519-010		CAP,M/M 0.1-250 K	L211	87-003-106-080		COIL,0.33UH LAL02	X302	87-030-327-010		VIB,CER CSB503F30				
△C802	87-016-519-010		CAP,M/M 0.1-250 K	L303	82-JT2-608-010		FLTR,DL PHASE	X303	87-030-242-080		VIB,XTAL 3.58M TV				
C803	87-018-131-080		CAP,TC-U 1000P-50 B	L304	87-003-145-080		COIL,8.2UH LAL02								
C804	87-016-515-080		CAP,CER 1000P-1K B	L306	87-005-481-080		COIL,47UH J FLR50								
C805	87-016-515-080		CAP,CER 1000P-1K B	L308	87-003-284-080		COIL,27UH LAL02								
△C806	87-019-113-090		CAP SG2200P-400(FMG)	L309	87-003-286-080		COIL 56UH								
△C807	87-019-113-090		CAP SG2200P-400(FMG)	L310	87-003-102-080		COIL,10UH								
△C808	87-019-113-090		CAP SG2200P-400(FMG)	L601	84-LB3-635-010		COIL,MLH-600 LIN<141>								
C809	87-010-976-080		CAP,CER 1000P-500 B	L601	84-LB2-621-010		COIL,MLH-605 LIN<201>								
C810	87-016-518-090		CAP,E 220-400 SMH	△L801	84-LB3-632-010		COIL,DGC 14 PAL<141>								
C811	87-016-516-010		CAP,M/PP1000P-1.25KH	△L801	84-LB2-616-010		COIL,DGC 20 PAL<201>								
C813	87-010-112-080		CAP,E 100-16	△L802	84-LB3-670-010		FLTR,LINE HL-24-822								
C814	87-010-406-080		CAP,E 22-50 SME	L804	82-132-631-080		COIL,4.7MH J								
C815	87-010-112-080		CAP,E 100-16	L901	87-003-102-080		COIL,10UH<201>								
C816	87-012-372-010		CAP,CER 1000P-2K	FIN801	82-481-649-010		PLUG,2P MINI								

TRANSISTOR ILLUSTRATION

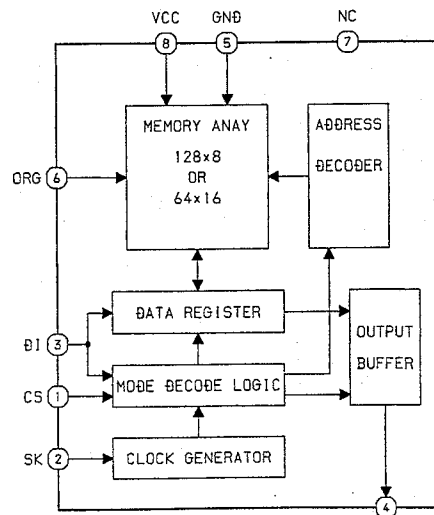


IC BLOCK DIAGRAM

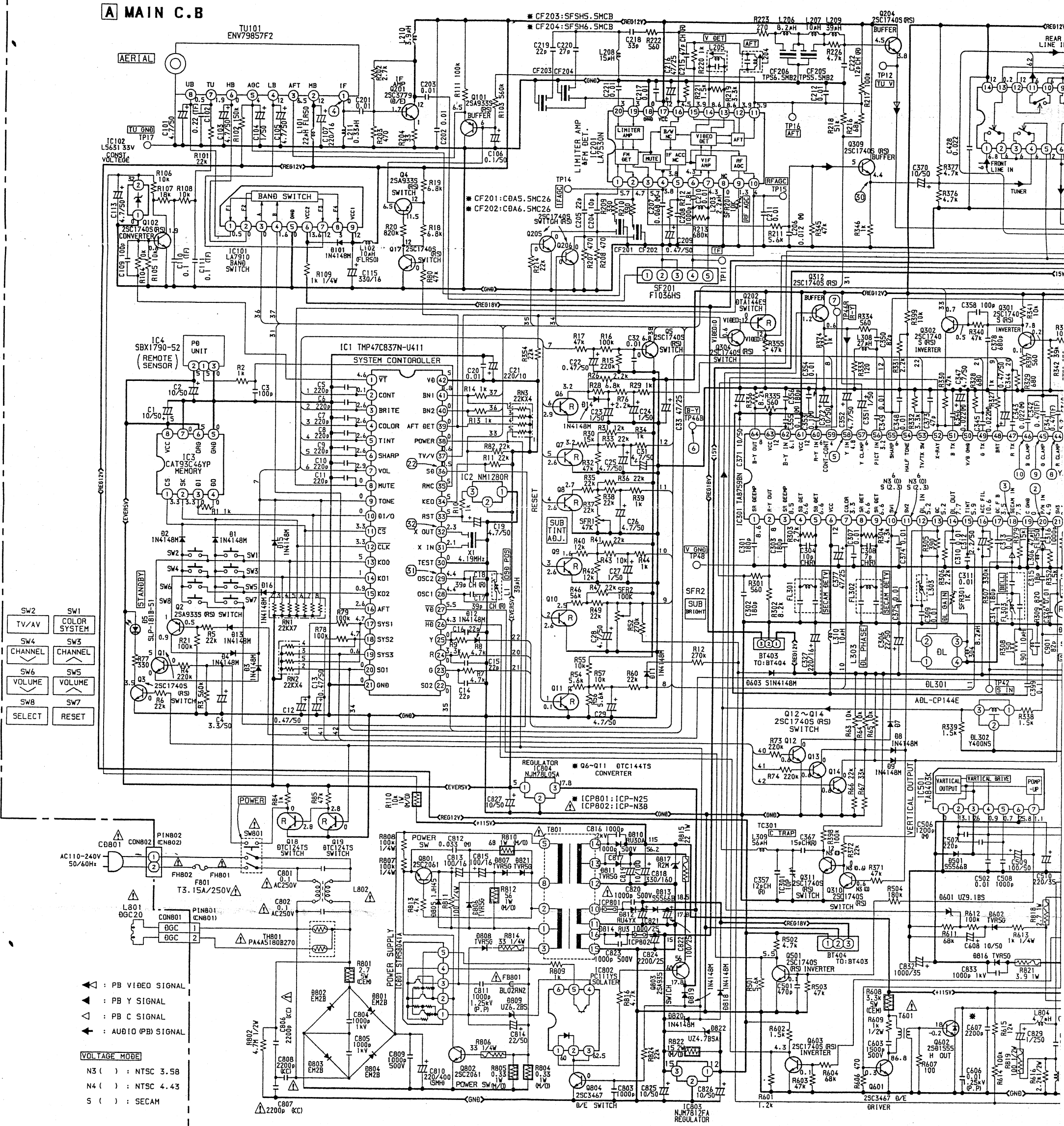
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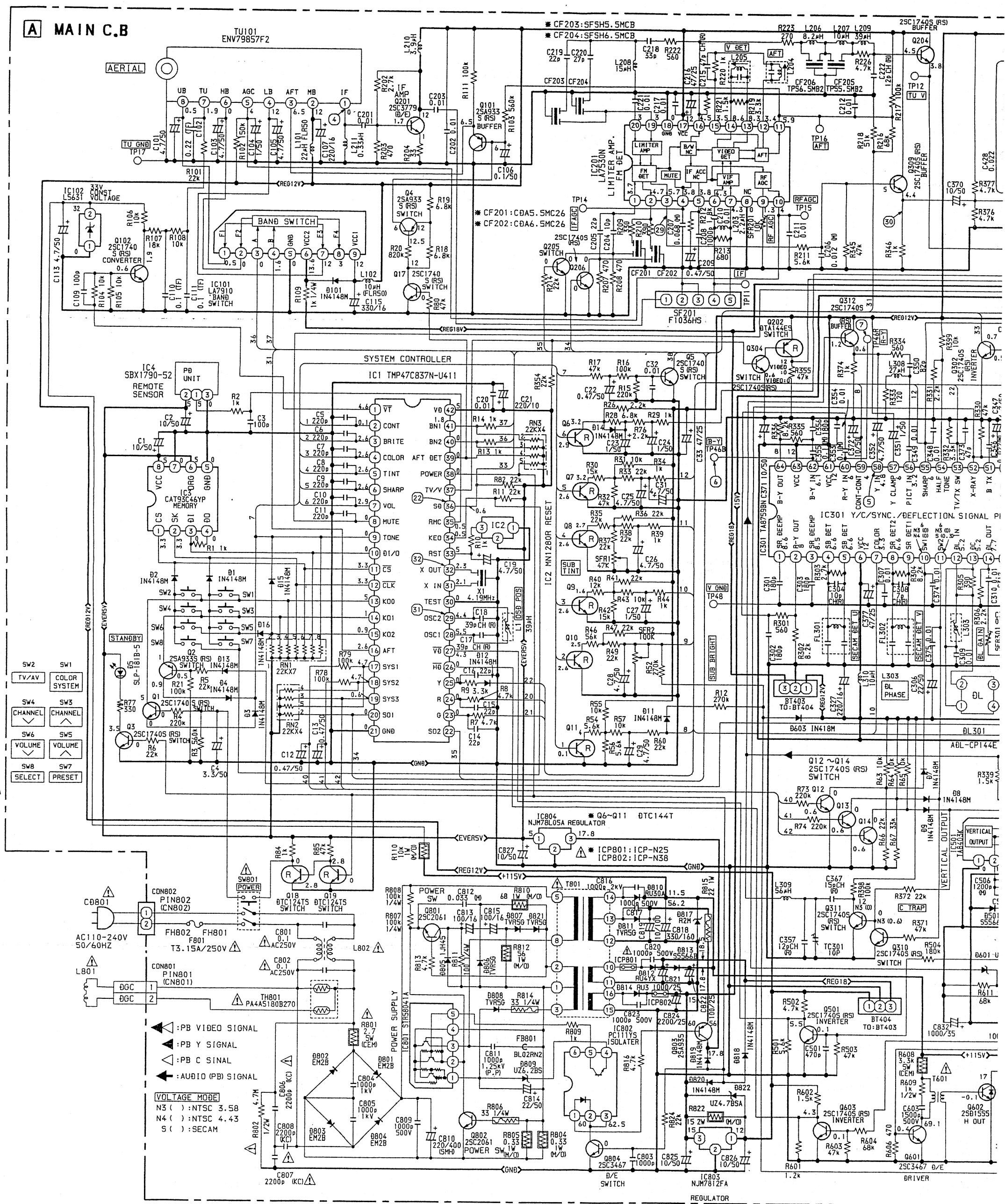
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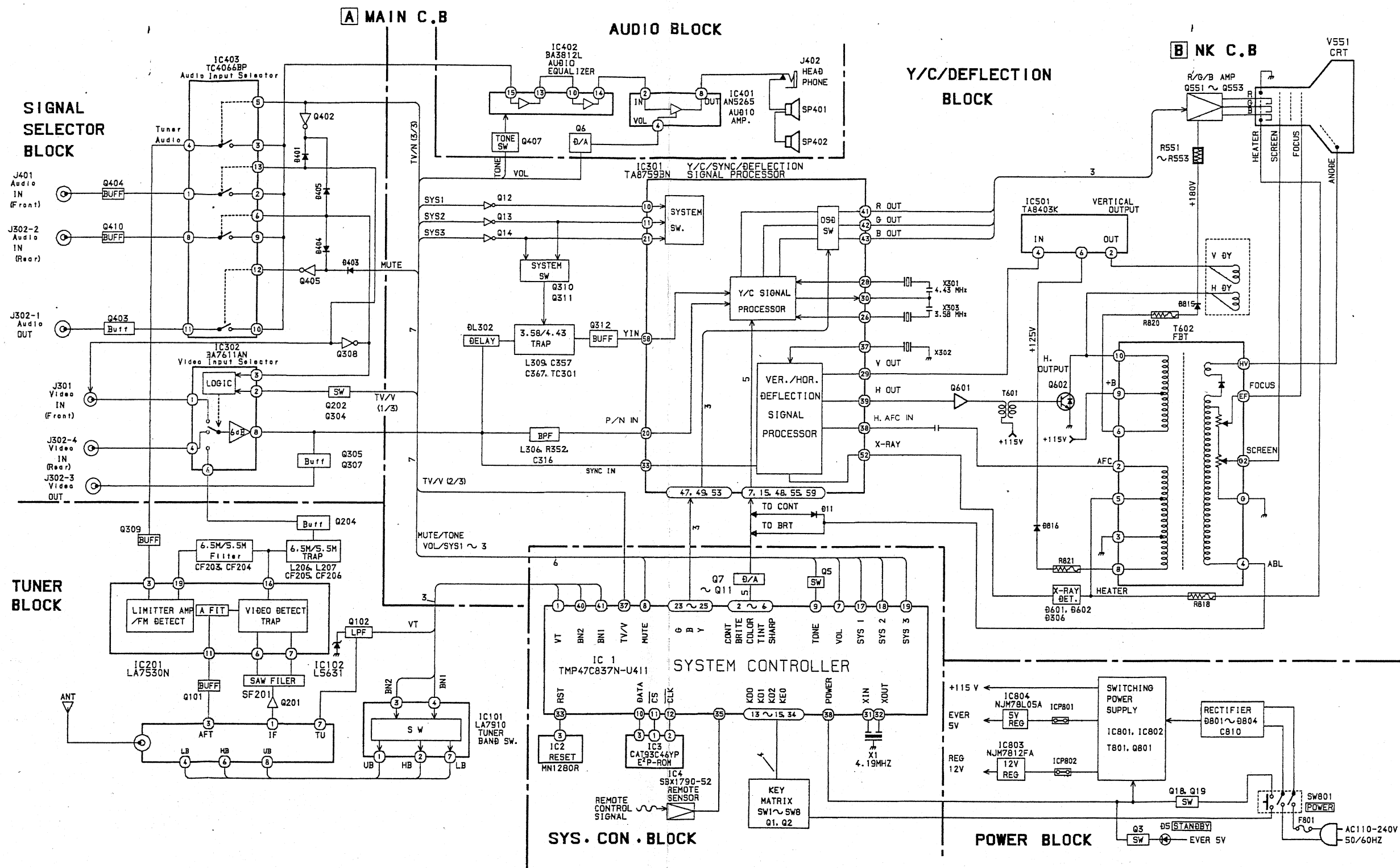
A MAIN C.B









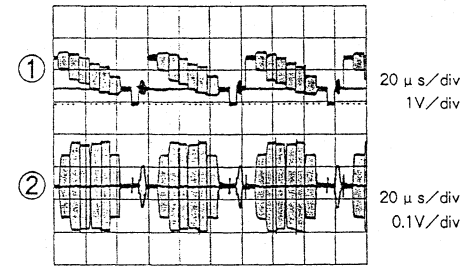


A
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B
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C
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J
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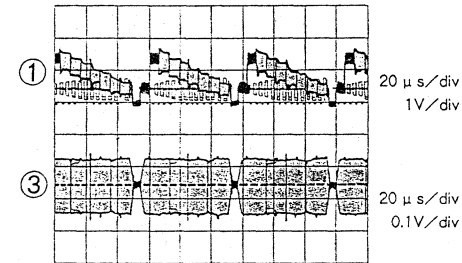


WAVEFORM

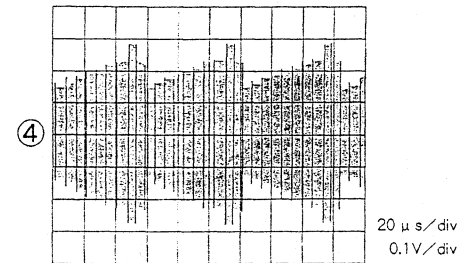
- ① Q305 Emitter PAL TU IN
- ② IC301 Pin ②① PAL TU IN



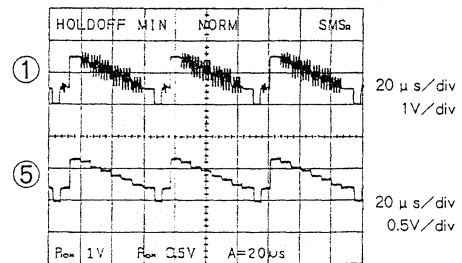
- ① Q305 Emitter SECAM TU IN
- ③ IC301 Pin ①⑧ SECAM TU IN



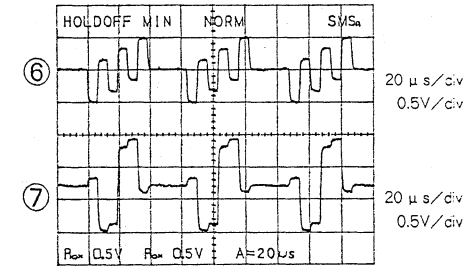
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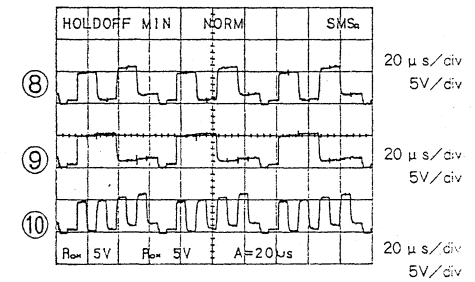
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- ⑤ IC301 Pin ⑤⑧ Y IN



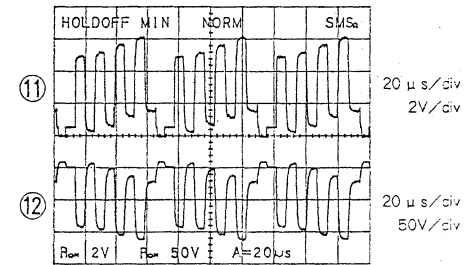
- ⑥ TP46B B-Y
- ⑦ TP46R R-Y



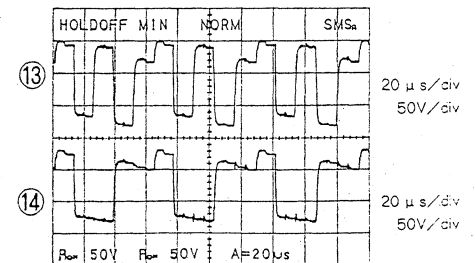
- ⑧ IC301 Pin ④④
- ⑨ IC301 Pin ④⑤
- ⑩ IC301 Pin ④⑥



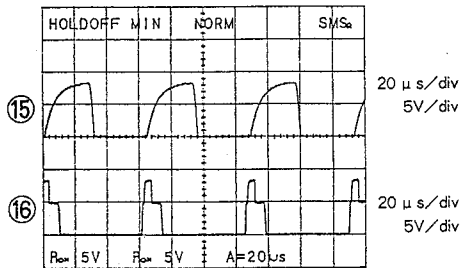
- ⑪ TP47B B OUT
- ⑫ Q553 Collector B



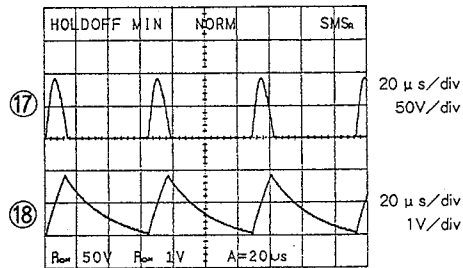
- ⑬ Q551 Collector R
- ⑭ Q552 Collector G



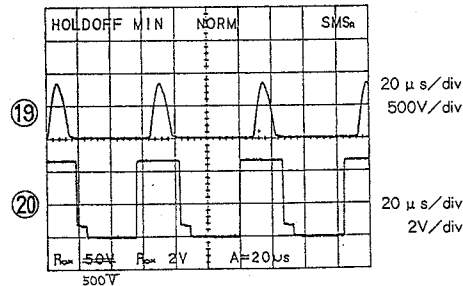
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⑯ IC301 Pin ⑤



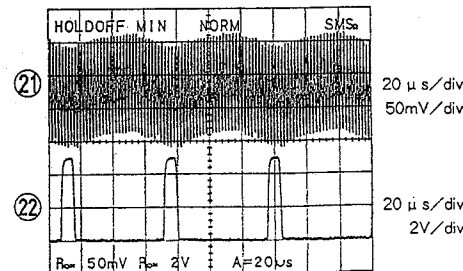
⑰ T602 Pin ② FBP
⑱ IC301 Pin ③



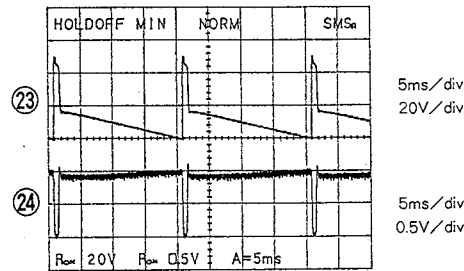
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⑳ IC301 Pin ③ H OUT



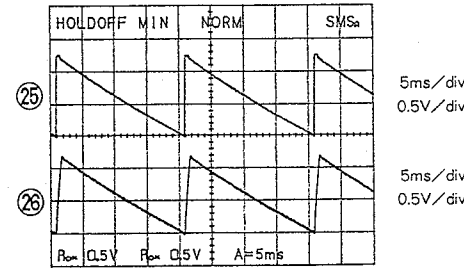
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㉒ IC1 Pin ③ SD



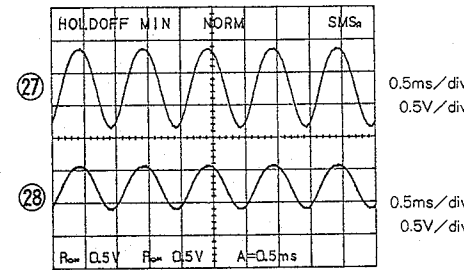
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㉔ IC301 Pin ② V OUT



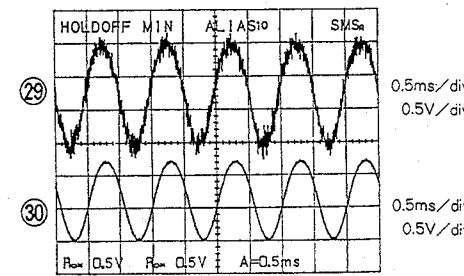
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㉖ IC301 Pin ③ V NF



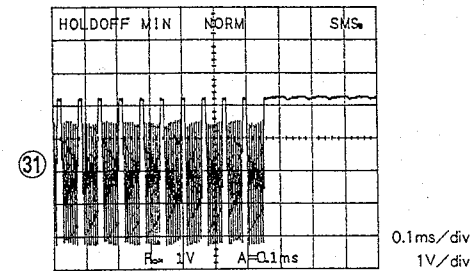
㉗ IC402 Pin ⑮ SOUND 1 kHz
㉘ IC401 Pin ② SOUND 1 kHz



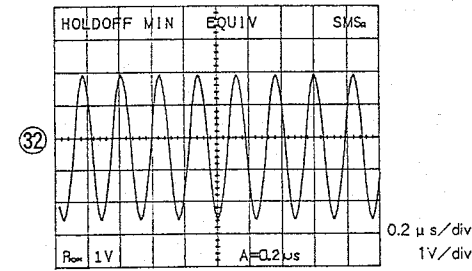
㉙ IC201 Pin ③
㉚ Q309 Emitter



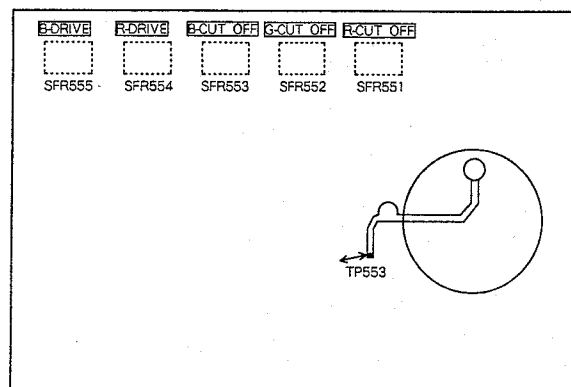
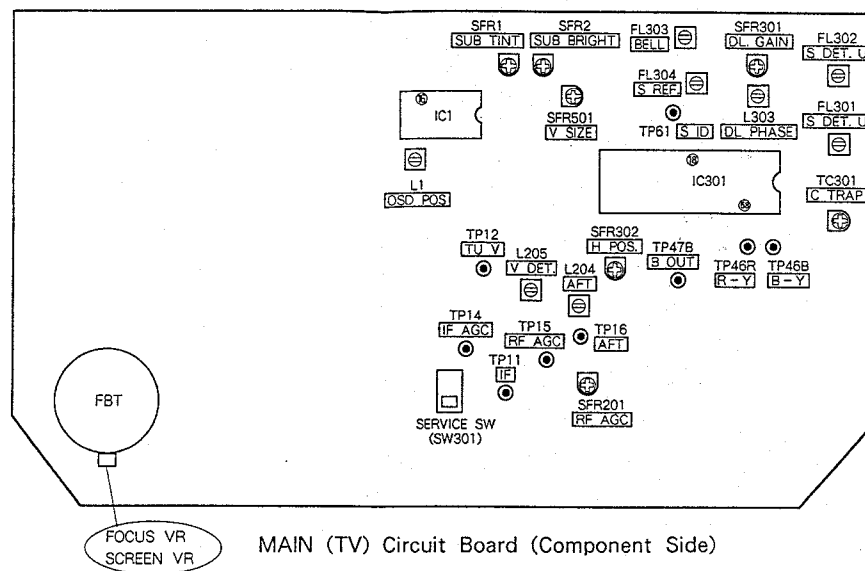
㉛ IC1 Pin ②



㉜ IC1 Pin ③



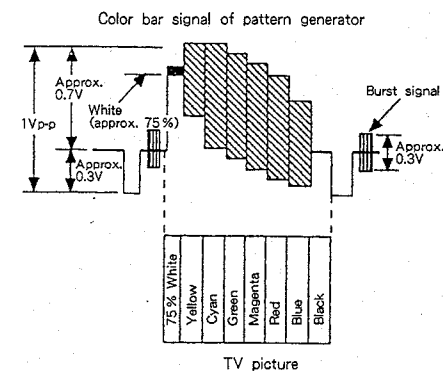
ADJUSTMENT



NK Circuit Board (Solder Side)

SETUP FOR ADJUSTMENT

Since the video signal generated by a pattern generator is used for adjustment, this video output signal should be within the specifications. Observe the output waveform with a $75\ \Omega$ load and check that the amplitudes of the sync signal, video component and burst signal are approx. 0.3V, 0.7 V and 0.3 V and they are flat, and also the ratio in level between the burst signal and red signal is 0.30 : 0.66. If these drift, the pattern generator must be calibrated (refer to the instruction manual of the pattern generator). Use a LEADER LCG404 pattern generator.



CAUTIONS DURING ADJUSTMENT

Be sure to satisfy the following conditions before adjusting any items.

- Warm up the unit for more than 20 minutes (do not switch it off midway).
- Set all the customer picture controls to their center positions when otherwise not specified.
- Set the output level of the pattern generator to 1.0 Vp - p (with a $75\ \Omega$ load).

1. CRT ADJUSTMENT

Caution :

1. Warm up the unit for more than 20 minutes.
2. Turn the power of the unit on and use a degaussing coil to degauss the whole screen.

1-1. Center Convergence Coarse Adjustment (See Figure 1-1)

- (1) Loosen the screw holding the deflecting coil.
- (2) Receive a green raster signal from the pattern generator.
- (3) Move the deflecting coil until it touches the funnel

of the CRT.

- (4) Adjust two purity magnets so that green appears at the center of the screen and red and blue appear at the two edges.
- (5) Switch the pattern generator from the green raster signal to a crosshatch signal.
- (6) Loosen the ring holding the rotary magnet.
- (7) Adjust two 4-pole magnets so that red and blue of the red, green and blue crosshatch patterns at the center of the screen overlap each other.
- (8) Adjust two 6-pole magnets so that red/blue (magenta) and green overlap each other.
- (9) Repeat steps (7) and (8) so the screen becomes white.

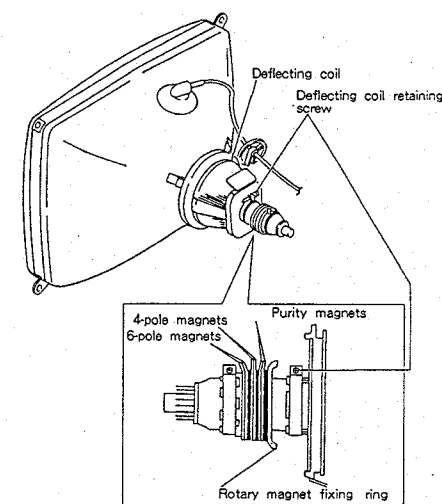


Fig. 1-1

1-2. Purity Adjustment

Caution :

Perform this adjustment after completing adjustment 1-1.

- (1) Receive a green raster signal from the pattern generator.
- (2) Adjust the two purity magnets by opening them at the same angle so the center of the screen becomes green. Also adjust them so the widths of the color at both edges are equal.
- (3) Tighten the rotary magnet retaining ring.
- (4) Move the deflecting coil gradually backwards (towards the neck) and stop it when the whole screen becomes green.
- (5) Perform the same check for monochromatic red and blue.
- (6) Observe the picture and correct the tilt of the deflecting coil and tighten the deflecting coil retaining screw. If color unevenness remains at the circumference of the screen, use a landing magnet to correct it. (See Figure 1-2)

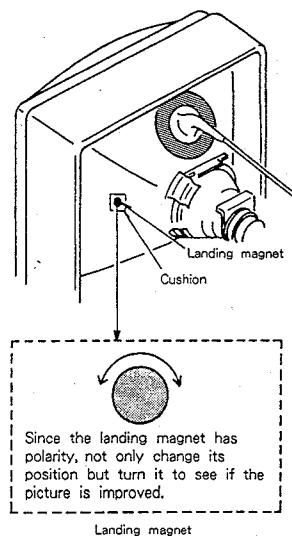


Fig. 1-2

1-3. Center Convergence Adjustment

Caution :

Perform this adjustment after completing adjustment 1-2.

- (1) Receive a crosshatch signal from the pattern generator.
- (2) Adjust two 4-pole magnets so that red and blue of

the red, green and blue crosshatch patterns at the center of the screen overlap each other.

- (3) Adjust two 6-pole magnets so that red/blue (magenta) and green overlap each other.

1-4. Circumference Convergence Adjustment

Caution :

Perform this adjustment after completing adjustment 1-3.

- (1) Move the deflecting coil up/down and to the left/right to adjust the drift at the circumference of the screen. (See Figure 1-3)
- (2) Insert three wedges between the deflecting coil and CRT funnel surface to retain the deflecting coil.

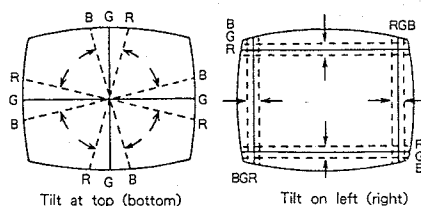


Fig. 1-3

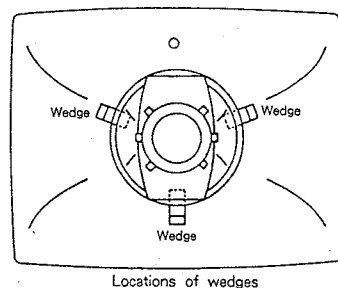


Fig. 1-4

2. ELECTRICAL ADJUSTMENT

2-1. Screen Adjustment

- (1) Use the service switch (SW301) to set the TV to the service mode (single horizontal line).
- (2) Set the TV to the external input mode (no input).
- (3) Connect an oscilloscope to TP553 (on the NK C.B.).
- (4) Adjust SFR 552 (G-CUT OFF) so the voltage at TP553 is 150V DC. (See Figure 2-1)
- (5) Disconnect the oscilloscope.
- (6) Adjust the SCREEN VR (FBT) so that a horizontal line begins to appear at the center of the screen.
- (7) Return the service switch (SW301) to its original position.

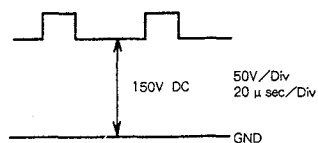


Fig. 2-1

* Be sure to perform the sub-brightness adjustment after completing this adjustment.

2-2. White Balance Adjustment (NK C.B.)

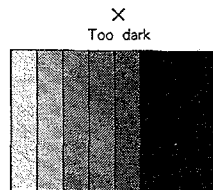
- (1) Receive a PAL raster signal (white).
- (2) Set the customer picture controls "brightness" and "contrast" to minimum.
- (3) Set the CUT OFF SFR (SFR551, SFR552, SFR553) and DRIVE SFR (SFR554, SFR555) to their mechanical centers.
- (4) Leave the CUT OFF SFR of the color which is brightest on the screen as it is and use other two CUT OFF SFR to adjust the white balance.
- (5) Set the customer picture controls "brightness" and "contrast" to maximum.
- (6) Turn SFR554 (R DRIVE) fully counterclockwise so the whole screen becomes red.
- (7) Turn SFR554 (R DRIVE) gradually clockwise and stop it where red disappears from the screen.
- (8) Turn SFR555 (B DRIVE) fully counterclockwise so the whole screen becomes blue.
- (9) Turn SFR555 (B DRIVE) gradually clockwise and stop it where blue disappears from the screen.
- (10) Repeat steps (1)-(4) and (5)-(9) until the white balance has been adjusted completely.
- (11) Return the customer picture controls to their original positions.
- (12) Receive a staircase signal (color bar with chroma off) and check that there is no unnatural color at

any bands.

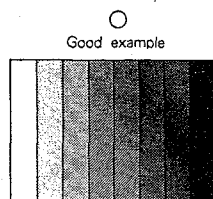
* Perform 2-3. Sub-brightness adjustment after completing the white balance adjustment.

2-3. Sub-brightness Adjustment

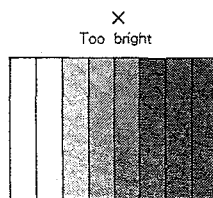
- (1) Receive a PAL staircase signal (color bar with chroma off).
- (2) Adjust SFR2 so the band next to the right end starts to light. (See Figure 2-2)



Two bands on the right are dark and cannot be distinguished.



The band on the right end is not lit and the adjacent band is very dim.



The band on the right end is lit.

Fig. 2-2

2-4. Focus Adjustment

- (1) Receive a PAL dot pattern signal.
- (2) Adjust the FOCUS SFR (FBT) so the focus of the dots is optimum.

2-5. Center Position Adjustment

- (1) Receive a PAL center cross signal.
- (2) Adjust SFR302 so the condition shown in Figure 2-3 is obtained.

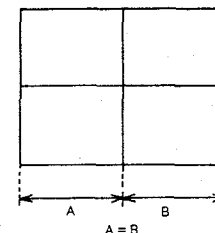


Fig. 2-3

2-6. Vertical Size Adjustment

- (1) Receive a PAL crosshatch signal.
- (2) Adjust SFR501 so the aspect ratio (ratio of horizontal vs vertical) is 3 : 4.

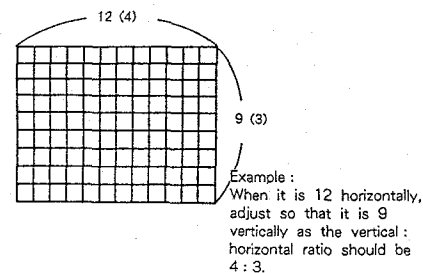


Fig. 2-4

2-7. Sub-tint Adjustment

- (1) Receive an NTSC 4.43 MHz color bar signal.
- (2) Connect an oscilloscope to TP47B.
- (3) Adjust SFR1 so the bottom edges of the waveform fall on one line. (See Figure 2-5)

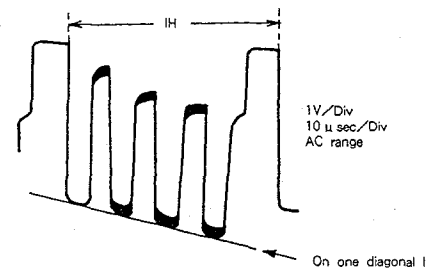


Fig. 2-5

2-8. OSD Position Adjustment

- (1) Receive a color bar signal.
- (2) Press the select switch once.
- (3) Adjust L1 so the OSD characters are displayed as shown in Figure 2-6.

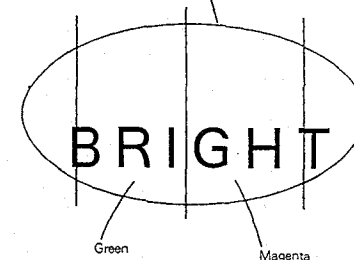
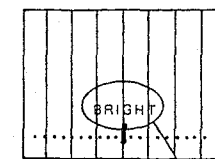


Fig. 2-6

2-9. AGC Adjustment

- (1) Receive a PAL color signal under the following conditions.

Input level : 62 dB μ

Modulation percentage : 87.5%

Received channel : CCIR CH E9 or E12

- (2) Adjust SFR201 so the voltage at TP15 is 7.0 V \pm 0.3 VDC.

3. TUNER ADJUSTMENT

3-1. PAL DELAY Adjustment

- (1) Receive a PAL DEM pattern signal.
- (2) Connect an oscilloscope to TP46R.
- (3) Adjust SFR301 and L303 several times alternately so the A and B components are minimum.
(See Figure 3-1)

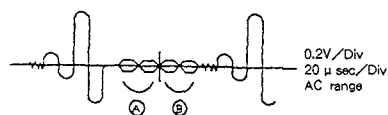


Fig. 3-1

3-2. SECAM Reference Coil Adjustment

- (1) Receive a SECAM color bar signal.
- (2) Connect a DC voltmeter to TP61.
- (3) Adjust FL304 so the DC voltage is maximum (more than 10 V).

3-3. SECAM Detector Coil Adjustment

- (1) Receive a SECAM color bar signal.
- (2) Connect an oscilloscope to TP46R.
- (3) R-Y adjustment
Adjust FL302 so the amplitude from black to white in periods ④ and ⑤ is the same as that of the sync signal as shown in Figure 3-2.

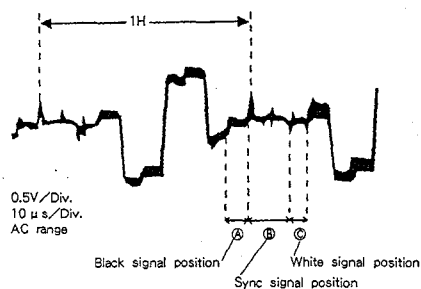


Fig. 3-2

- (4) Connect the oscilloscope to TP46B.

(5) B-Y adjustment

Adjust FL301 so the amplitude from black to white in periods ④ and ⑤ is the same as that of the sync signal as shown in Figure 3-3.

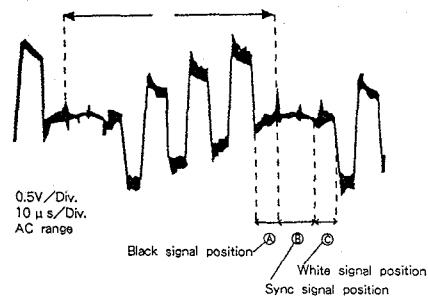


Fig. 3-3

3-4. 4.43 MHz Trap Adjustment

- (1) Receive a PAL color bar signal.
- (2) Connect an oscilloscope to IC301 pin 58.
- (3) Adjust TC301 to minimize 4.43 MHz chroma components. (See Figure 3-4)

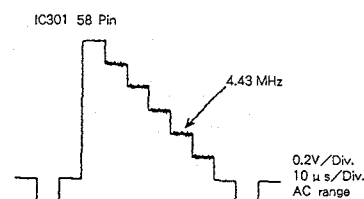


Fig. 3-4

3-5. Bell Filter Adjustment

- (1) Receive a SECAM magenta signal.
- (2) Connect an oscilloscope to IC301 pin 18.
- (3) Adjust FL303 so the amplitudes of the two waveforms on the left and right are equal. (See Figure 3-5)

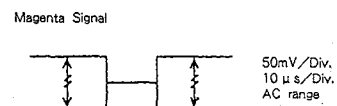


Fig. 3-5

3-6. Video Detector Coil Adjustment

Use the following test equipment.

- Swemar Generator LSW-1481
- VIF Plug-In Unit 480-U80
- Alignment Scope LB0-9C
- ATT/Signal Selector LAS-1575-42

- (1) Connect the test equipment as follows.
(See Figure 3-6)

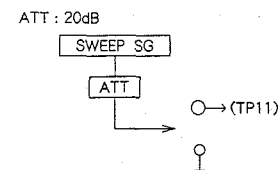


Fig. 3-6

- (2) Apply 3.5 VDC to TP14.
- (3) Adjust L205 so the 38.0 MHz marker is the lowest waveform at TP12. (See Figure 3-7)

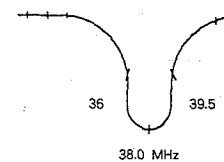


Fig. 3-7

3-7. AFT Coil Adjustment

(1) Coarse Adjustment

Connect the sweep SG, etc. in the same way as in 3-6. Video Detector Coil Adjustment. Apply a signal to TP11 and turn AFT off.

ATT: 20 dB

- (2) Adjust L204 so the 38.0 MHz marker is at the center of the straight line of the waveform at TP16.

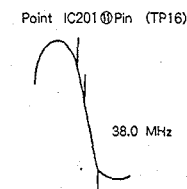


Fig. 3-8

(3) Precise Adjustment

Use an AM/FM SSG.

- CARRIER 38 MHz
- LEVEL 90 dB μ

Apply a signal to TP11 and turn AFT off.

- (4) Adjust L204 so the DC voltmeter reads $2.5V \pm 0.2V$ at IC1 pin 16.

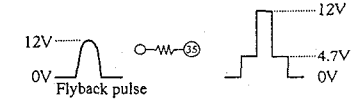
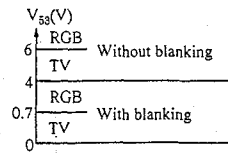
IC, DESCRIPTION

IC, TMP47C837N – U411 (Z)

Pin No.	Pin Name	I/O	Description
1	\overline{VT}	O	Tuner tuning voltage output (PWM output)
2-6	CONTRAST, BRIGHT, COLOR, TINT, SHARPNESS	O	Picture control voltage outputs (PWM outputs)
7	VOL	O	Volume control voltage output (PWM output)
8	MUTE	O	Audio muting voltage output (both speaker and line input)
9	TONE	O	Monaural sound (expander) control voltage output
10	DI/O	I/O	E ² PROM data input/output
11	\overline{CS}	I/O	E ² PROM CS output/key matrix KO1
12	\overline{CLK}	I/O	E ² PROM CLK output/key matrix KO2
13-15	KO 0-2	I	Key matrix K10-2
16	AFT	I	Tuner AFT voltage input
17	SYS 1	O	Tone switch (bass boost) voltage output (PWM output)
18	SYS 2	I/O	On-timer LED control output/key matrix KO4
19	SYS 3	O	AFT control voltage output
20	SO 1	O	Sound multiplex forced mono mode switching voltage output
21	GND	—	GND
22	SO 2	O	Sound multiplex output switching voltage output
23, 24	GREEN, RED	O	OSD control signal outputs
25	Y(BL)	O	Luminance signal output (background blanking control signal output)
26, 27	\overline{HD} , \overline{VD}	I	OSD horizontal/vertical sync pulse inputs
28, 29	OSC 1, OSC 2	I/O	OSD oscillator
30	TEST	I	Microprocessor shipment test terminal (normally, GND)
31, 32	XTAL IN, OUT	I/O	Microprocessor operation clock oscillator
33	RST	I	Microprocessor reset input
34	KEO	I	Key matrix K13
35	RMC	I	Remote control receiver pulse input
36	SD	I	Tuner SD (sync detection) input
37	TV/V	O	TV (tuner)/V (VCR) switching voltage output
38	POWER	O	Secondary power control output
39	AFT DET	I	Matrix surround control output
40, 41	BN2, BN1	O	Tuner band switching output
42	VD	—	Power supply

IC.TA8759BN

Pin No.	Pin Name	I/O	Description
1, 3	SR DEEMP	—	For the connection of a SECAM deemphasis filter
2, 64	R-Y/B-Y OUT	O	Color difference signal outputs
4, 5, 8, 9	SB, SR DET	—	For the connection of a SECAM detection tank coil
6	VCC	—	VCC=12V (standard). Power supply of chroma circuits
7	COLOR	I	Color control terminal. Goes "L" when the color killer operates.
10, 11, 21	SW1, 2, 3	I/O	Outputs an identification signal in the auto mode and receives a forced signal in the manual mode. See the logic table for the outputs in the auto mode. When current over 0.75 mA (standard) flows to pin 11, an NTSC signal is not accepted. When current over 0.75 mA (standard) flows to pin 21, a killer is applied to the color-difference outputs and the RGB system is set to the color state. When pin 21 is set to "H" in the manual mode so the above switch is not turned on, set it to 6.0V+0.5V. (Do not connect to a power supply.)
12	DL IN	I	PAL/SECAM chroma 1H delayed signal input
13	DC	—	DC bias of PAL/NTSC matrix circuit and SECAM permutator
14	DL OUT	O	1H delay line PAL/SECAM chroma output
15	TINT	I	Tint control terminal. Can be controlled in the NTSC mode. When the pin voltage is set to 2 V or less, the TV can handle a teletext signal in the 312H/313H mode. Set to more than 2 V when an ordinary TV/VCR signal is received.
16	ACC FIL	—	For the connection of an ACC detection filter
17	DC FB	—	For the connection of a PAL/NTSC chroma amp DC feedback filter. The filter consists of resistors and externally attached capacitors.
18	SECAM IN	I/O	SECAM chroma signal input. Connect a bell filter. This is used in common with a 50/60 Hz discrimination output which goes "H" (7.50 V) with 60 Hz and "L" (4.45V) with 50 Hz.
19	C GND	—	Ground of chroma circuits
20	P/N IN	I	PAL/NTSC chroma signal input. This is used in common with a SECAM identification select switch.
22, 23, 27	P/S/N IDENT.	—	For the connection of an identification filter. Pin 22: PAL identification Pin 23: SECAM identification Pin 27: NTSC identification
24	S REF	—	For the connection of a resonance coil for SECAM identification. Tuned to 4.328 MHz. Adjust so the DC voltage at the SECAM identification (pin 23) is maximum when a SECAM signal is received.
25	APC FIL	—	For the connection of an APC filter
26, 28	3.58/4.43 IN	I	Crystal oscillator are connected between these pins and pin 30 as color subcarrier oscillators. Connect a 3.58 MHz crystal to pin 26. Connect a 4.43 MHz crystal to pin 28.
29	V OUT	O	Vertical output termina

Pin No.	Pin Name	I/O	Description
30	VCO OUT	O	Crystal oscillator are connected between this pin and pins 26 and 28 to form color subcarrier oscillators.
31	V RAMP	—	The externally attached capacitor is charged by the voltage determined by the Zener diode during the vertical retrace period and is discharged with the time constant determined by external resistors and capacitors during the scanning period to obtain a ramp waveform.
32	V NFB	I	Vertical output AC/DC feedback terminal
33	SYNC SEPA	I	Horizontal/vertical sync separator input. Apply a 2Vp-p video signal with negative sync via a filter.
34	GP TC	—	Connect time constant components to generate a gate pulse.
35	H BLK	I	Blanking pulse input. The pulse is shaped to apply blanking to the delay line drive, color difference outputs and RGB outputs and change the PAL switch. This is also used as a sync signal output. The masked sync signal is output in a period other than the input blanking pulse period and can be used to detect whether a signal is present, etc. 
36	AFC	—	For the connection of a filter for the horizontal AFC circuit
37	H OSC	—	Forms a 32fH (503kHz) oscillator.
38	H AFC	I	Forms a horizontal AFC circuit. Apply a sawtooth signal (2Vp-p) obtained by integrating the flyback pulses.
39	H OUT	O	Horizontal output with 42% duty and 5.1Vp-p (standard).
40	H VCC	—	H.VCC=9V (standard). Power supply of horizontal deflection circuit
41-43	R/G/B OUT	O	Pin 41: R output, Pin 42: G output, Pin 43: B output
44-46	R/G/B CLAMP	—	For the connection of clamp capacitors. Pin 44: R, Pin 45: G, Pin 46: B
47, 49, 51	R/G/B TX	I	External RGB signal inputs. The signal level is 0.7Vp-p.
48	BRT	I	Brightness control terminal
50	V/D GND	—	Ground of deflection and video systems
52	X-RAY	I	Overvoltage protector circuit. The threshold is 1.3V (standard). If a voltage exceeding this is applied, the horizontal output terminal (pin 39) is set to "L".
53	TV/TX SW	I	Switch changed between the TV and external RGB signals and for blanking 

Pin No.	Pin Name	I/O	Description
54	HALF TONE	I	<p>Half tone switch. The threshold voltage is as follows. This pin is also used as a WPS (white peak suppressor) switch. Half tone / WPS off / on</p>
55	SHARP	I	Picture control terminal. This is also used as a video muting terminal. When the voltage is 0.7V or less, the brightness (pin 48) is set to 3V for the TV mode.
56	PICT IN	I	Secondary differential signal input
57	Y CLAMP	-	For the connection of a pedestal clamp capacitor
58	Y IN	I	Video signal input terminal. Apply a video signal with negative sync.
59	CONT - CONT	I	Uni-color control. Controls the color gain as well as the video gain. This is also used as an external RGB contrast control.
60, 62	R-Y/B-Y IN	I	Color difference signal input terminal. Pin 60: R-Y input, Pin 62: B-Y input
61	VCC	-	VCC=12V (standard). Power supply of video, chroma and deflection systems
63	VCC	-	Power supply of RGB output circuit

Logic Table in AUTO Mode

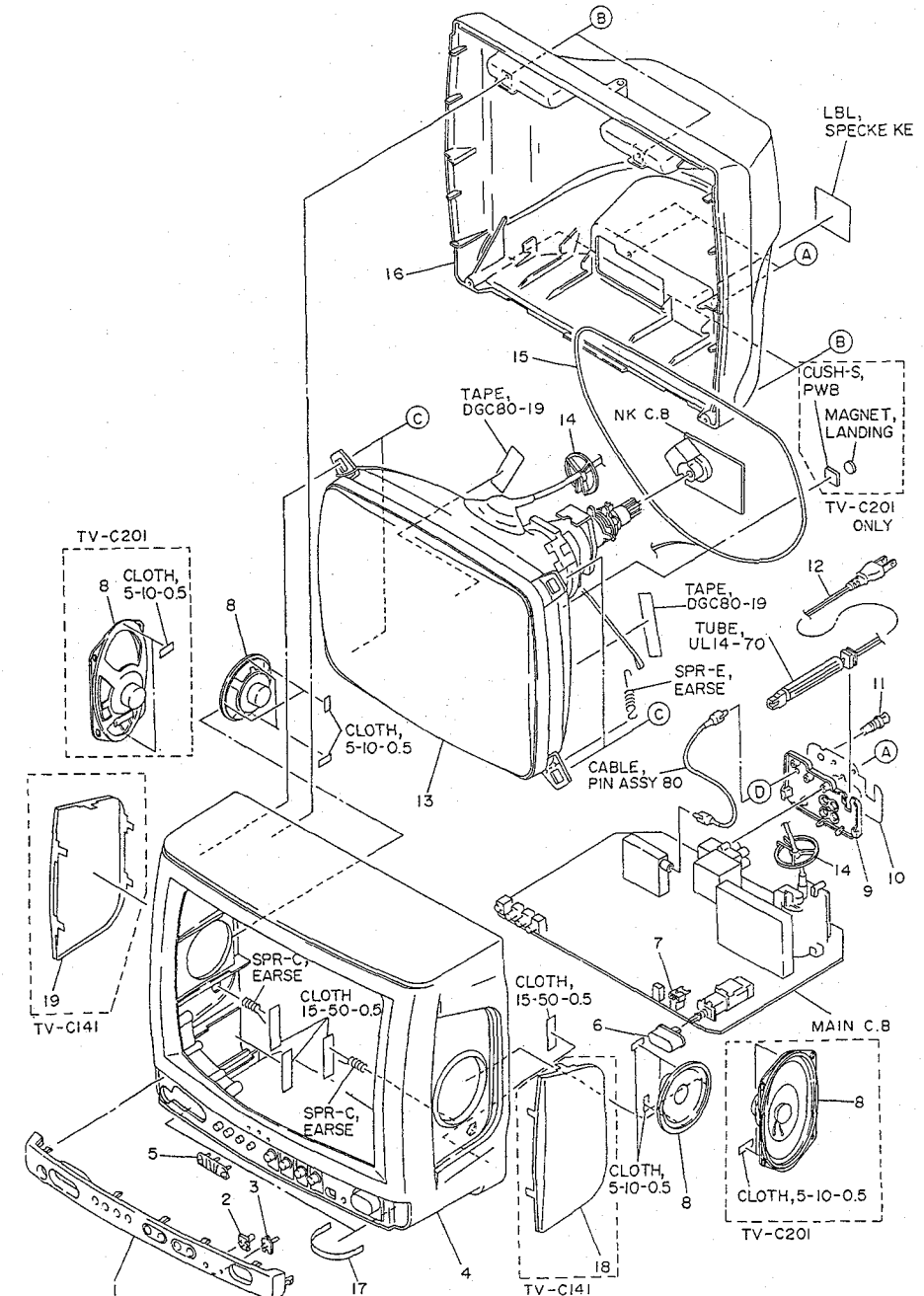
Identification			Crystal mode	SW I	SW II	SW III	Discriminated mode
PAL	SECAM	NTSC		Pin 10	Pin 11	Pin 21	
Pin 22	Pin 23	Pin 27					
H	L	H	4.43	H	H	M	PAL
L	H	L	4.43	H	M	M	SECAM
L	L	H	4.43	L	H	M	4.43 NTSC
L	L	H	3.58	L	L	M	3.58 NTSC
L	L	L	4.43/3.58	L	M/L	L	B/W
H → VCC L = 6V			-	H=6.0V(1/2VCC) M=2.0V(1/16VCC) L=0V (grounded with 30k Ω), output from the IC			-

Switch Input Voltages in Manual Mode

Mode	SW I	SW II	SW III
Pin 10	Pin 11	Pin 21	
PAL	H	H	H
SECAM	H	(M)	H
4.43 NTSC	(L)	H	H
3.58 NTSC	(L)	(L)	H

Set "H" to 6V ± 0.5V.

The outputs in parentheses () are determined within the IC automatically when the remaining pins are set to "H".



MECHANICAL PARTS LIST 1/1

DESCRIPTIONで判断できない物は“REFERENME LIST”を参照してください。
If can't understand for Description please kindly refer to “REFERENCE NAME LIST”.

REF.NO	PART NO.	カリ NO.	DESCRIPTION	REF.NO	PART NO.	カリ NO.	DESCRIPTION
1	84-LB2-017-010		PANEL, CONTROL KE<C201>	△ 12	84-LB3-686-110		AC CORD SET, E
1	84-LB3-052-010		PANEL, CONTROL KE<C141>	13	84-LB3-601-010		CRT, A34KP002XXA1<C141>
2	84-LB2-008-010		LENS, RC<C201>	13	84-LB2-601-010		CRT, A48KUV220X30<C201>
2	84-LB3-034-010		LENS, RC<C141>	14	87-064-186-010		HLDR, HV CABLE IR4151
3	84-LB2-007-010		LENS, LED<C201>	15	84-LB3-632-010		COIL, DGC 14 PAL<C141>
3	84-LB3-046-010		LENS, LED<C141>	15	84-LB2-616-010		COIL, DGC 20 PAL<C201>
4	84-LB2-021-010		CAB, FR KE<C201>	16	84-LB3-042-010		CAB, REAR<C141>
4	84-LB3-051-010		CAB, FR KE<C141>	16	84-LB2-002-110		CAB, REAR<C201>
5	87-054-086-010		BADGE AIWA 52.5<C201>	17	84-LB3-024-010		PLATE, FOOT KE<C141>
5	87-054-087-010		BADGE, AIWA 40<C141>	17	84-LB2-020-010		PLATE, FOOT KE<C201>
6	84-LB3-053-010		BTN, POWER KE<C141>	18	84-LB3-022-010		GRILLE, SP L KE<C141>
6	84-LB2-016-010		BTN, POWER KE<C201>	19	84-LB3-023-010		GRILLE, SP R KE<C141>
7	84-LB3-201-010		HLDR, LED<C201>	A	87-067-761-010		BVT2+3-10 BLK
7	84-LB3-216-010		HLDR, LED<C141>	B	87-067-844-010		BVT2+4-16 BLK
8	84-LB3-641-010		SP, F DIA 7.6<C141>	C	87-078-126-010		S-SCREW ASSY, 5-25<C141>
8	84-LB2-625-010		SP, F DIA 7.6X12.5<C201>	C	87-078-140-010		S-SCREW ASSY, 5-40<C201>
9	84-LB3-015-010		PANEL, JACK<C201>	D	87-067-941-010		NUT, 3/8-32UNF-2B
9	84-LB3-044-010		PANEL, JACK<C141>				
10	84-LB3-016-010		PLATE, JACK KE				
11	84-LB3-617-010		JACK, ANT PAL/PIN				

ACCESSORIES/PACKAGE LIST

DESCRIPTIONで判断できない物は“REFERENCE NAME LIST”を参照してください。
If can't understand for Description please kindly refer to “REFERENCE NAME LIST”.

REF. NO.	PART NO.	カリ NO.	DESCRIPTION
1	84-LB3-912-010		18, KER(S)
2	84-LB3-955-010		RC, RC-TC141KE

REFERENCE NAME LIST

ELECTRICAL SECTION

DESCRIPTION	REFERENCE NAME
ANT	ANTENNAS
C	CHIP
C-CAP	CAP, CHIP
C-CAP TN	CAP, CHIP TANTALUM
C-COIL	COIL, CHIP
C-DI	DIODE, CHIP
C-DIODE	DIODE, CHIP
C-FET	FET, CHIP
C-FOTR	FILTER, CHIP
C-JACK	JACK, CHIP
C-LED	LED, CHIP
C-RES	RES, CHIP
C-SFR	SFR, CHIP
C-SLIDE SW	SLIDE SWITCH, CHIP
C-SW	SWITCH, CHIP
C-TR	TRANSISTOR, CHIP
C-VR	VOLUME, CHIP
C-ZENER	ZENER, CHIP
CAP, CER	CAP, CERA-SOL
CAP, E	CAP, ELECT
CAP, M/F	CAP, FILM
CAP, TC	CAP, CERA-SOL
CAP, TC-U	CAP, CERA-SOL SS
CAP, TN	CAP, TANTALUM
CERA FIL	FILTER, CERAMIC
CF	FILTER, CERAMIC
DL	DELAY LINE
E/CAP	CAP, ELECT
FILT	FILTER
FLTR	FILTER
FUSE RES	RES, FUSE
MOT	MOTOR
P-DIODE	PHOTO DIODE
P-SNSR	PHOTO SENSER
P-TR	PHOTO TRANSISTOR
POLY VARI	VARIABLE CAPACITOR
PPCAP	CAP, PP
PT	POWER TRANSFORMER
PTR, RES	PTR, MELF
RC	REMOTE CONTROLLER
RES NF	RES, NON-FLAMMABLE
RESO	RESONATOR
SHLD	SHIELD
SOL	SOLENOID
SPKR	SPEAKER
SW, LVR	SWITCH, LEVER
SW, RTRY	SWITCH, ROTARY
SW, SL	SWITCH, SLIDE
TC CAP	CAP, CERA-SOL
THMS	THERMISTOR
TR	TRANSISTOR
TRIMMER	CAP, TRIMMER
TUN-CAP	VARIABLE CAPACITOR
VIB, CER	RESONATOR, CERAMIC
VIB, XTAL	RESONATOR, CRYSTAL
VR	VOLUME
ZENER	DIODE, ZENER
サージサプレッサ	SERGESUPPRESSOR
セラコン	CAP, CERA

サービス技術ニュース	
番号	連絡内容
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MECHANICAL SECTION

DESCRIPTION	REFERENCE NAME
ADHESHIVE	SHEET ADHESHIVE
AZ	AZIMUTH
BAR-ANT	BAR-ANTENNA
BAT	BATTERY
BATT	BATTERY
BRG	BEARING
BTN	BUTTON
CAB	CABINET
CASS	CASSETTE
CHAS	CHASSIS
CLR	COLLAR
CONT	CONTROL
CRSR	CURSOR
CU	CUSHION
CUSH	CUSHION
DIR	DIRECTION
DUBB	DUBBING
FL	FRONT LOADING
FLY-WHL	FLYWHEEL
FR	FRONT
FUN	FUNCTION
G-CU	G-CUSHION
HDL	HANDOL
HIMERON	CLOTH
HINGE, BAT	HINGE, BATTERY
HLDR	HOLDER
HT-SINK	HEAT SINK
IB	INSTRUCTION BOOKLET
IDLE	IDLER
IND, L-R	INDICATOR, L-R
KEY, CONT	KEY, CONTROL
KEY, PRGM	KEY, PROGRAM
KNOB, SL	KNOB, SLIDE
LBL	LABEL
LID, BATT	LID, BATTERY
LID, CASS	LID, CASSETTE
LVR	LEVER
P-SP	P-SPRING
PANEL, CONT	PANEL, CONTROL
PANEL, FR	PANEL, FRONT
PRGM	PROGRAM
PULLY, LOAD MO	PULLY, LOAD MOTOR
RBN	RIBBON
S-	SPECIAL
SEG	SEGMENT
SH	SHEET
SHLD-SH	SHIELD-SHEET
SL	SLIDE
SP	SPRING
SP-SCREW	SPECIAL-SCREW
SPACER, BAT	SPACER, BATTERY
SPR	SPRING
SPR-P	P-SPRING
SPR-PC-PUSH	P-SPRING, C-PUSH
T-SP	T-SPRING
TERM	TERMINAL
TRIG	TRIGGER
TUN	TUNING
VOL	VOLUME
W	WASHER
WHL	WHEEL
WORM-WHL	WORM-WHEEL
ジグアーム	ARM, SHAFT
ジグガイド	GUIDE, SHAFT
ストラップ	STRAP
トクナベ	S-SCREW
ヒンジ	HINGE
ヒンジビス	S-SCREW
ビスセレート	SCREW, SERRART

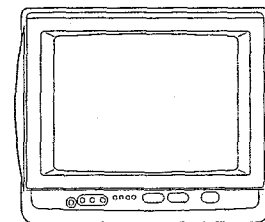
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TV-C141



COLOR TELEVISION

• TYPE: KER, KE1

SUPPLEMENT

- The Service Manual has information about difference only.
- If requiring the information, see Service Manual of TV-C201/C141KER.
- (S/M Code No. 09-956-104-001)

SERVICE MANUAL

ALTERATION SPECIFICATIONS

Receivable channel (KE1 model)

BAND	CHANNEL		
	CCIR	OIRT	INDONESIA
VHF-L	E2 - E4	R1 - R5	1A - 3
VHF-H	E5 - E12	R6 - R12	4 - 11
UHF	21 - 69	—	—
Broadcasting color system	B/G PAL, SECAM	D/K PAL, SECAM	B/G PAL

ALTERATION PARTS LIST

ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は“REFERENCE NAME LIST”を参照してください。
If can't understand for Description please kindly refer to “REFERENCE NAME LIST”.

REF. NO. PART NO. カリ DESCRIPTION
NO.

IC

87-A20-064-080 IC, UPC78L05

TRANSISTOR

84-LB2-699-080 TR, 2SC945A (C) P/O
87-026-215-080 TR, DTC114YS

MAIN C.B

C22 87-010-404-080 CAP, E 4.7-50 SME
C218 87-018-111-080 CAP, TC-U 27P-50 SL
C223 87-018-123-080 CAP, TC-U 220P-50 B
C328 87-018-195-080 CAP, TC-U 1200P-16X
C330 87-018-124-080 CAP, TC-U 270P-50 B

C378 87-018-131-080 CAP, TC-U 1000P-50 B
C822 87-016-299-080 CAP, E 10-100 SME
△CD801 87-LB3-686-110 AC CORD SET, E
FL303 84-LB3-622-010 FLTR, BELL2
J402 87-A60-001-010 JACK, DIA3.5 MONO W/SW

L204 84-LB3-636-010 COIL, AFT2
L208 87-003-282-080 COIL, 12UH
R616 87-029-175-010 RES, FUSE 2.2K-1/2WJ
△R802 87-A00-012-080 RES, SD 8.2M-1/2W K UL
TC301 87-011-219-089 TRIMMER 10P VCT

SC C.B

C553 87-018-122-080 CAP, TC-U 180P-50 B
V551 84-LB3-601-010 CRT, A34KPU02XXA1

When the CRT is replaced, color unevenness may occur on the new CRT. In this case, perform the CRT adjustment (see the TV-C141KER service manual).

サービス技術ニュース	
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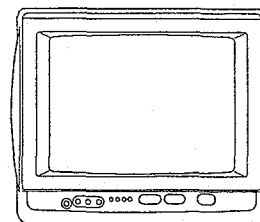
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TV-C201



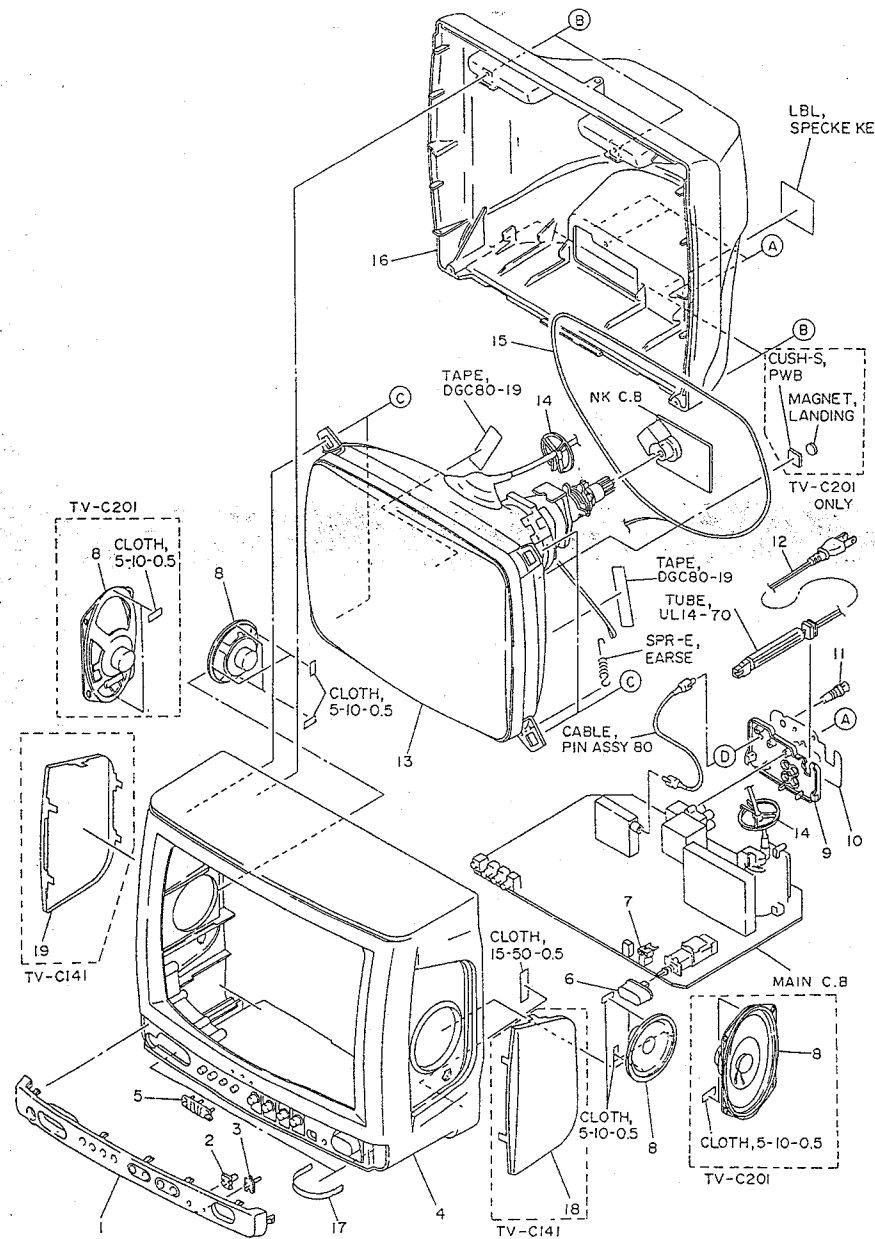
COLOR TELEVISION

• TYPE: KEJ4, KE1J

SUPPLEMENT

This Service Manual has information about difference only.
If requiring the information, see Service Manual of TV-C201<KER, KER3>/TV-C141<KER> (S/M Code No. 09-956-104-001).

SERVICE MANUAL



DESCRIPTIONで判断できない物は“REFERENCE NAME LIST”を参照してください。
If can't understand for Description please kindly refer to “REFERENCE NAME LIST”.

REF. NO.	PART NO.	カリ NO.	DESCRIPTION	REF. NO.	PART NO.	カリ NO.	DESCRIPTION
1	84-LB2-019-010		PANEL, CONTROL KET<C201>	13	84-LB2-604-010		CRT, 510UFB22TC67<C201 KEJ4>
1	84-LB3-052-010		PANEL, CONTROL KE<C141>	13	84-LB2-603-010		CRT, A94QAD220X02T<C201 KE1J>
2	84-LB2-008-010		LENS, RC<C201>	17	87-064-186-010		HLDR, HV CABLE 1T4151
2	84-LB3-034-010		LENS, RC<C141>	15	84-LB3-632-010		COIL, DGC 14 PAL<C141>
3	84-LB2-007-010		LENS, LED<C201>				
3	84-LB3-046-010		LENS, LED<C141>	15	84-LB2-616-010		COIL, DGC 20 PAL<C201>
4	84-LB2-021-010		CAB, FR KE<C201>	16	84-LB3-042-010		CAB, REAR<C141>
4	84-LB3-051-010		CAB, FR KE<C141>	16	84-LB2-002-110		CAB, REAR<C201>
5	87-054-086-010		BADGE A1WA 52, 5<C201>	17	84-LB3-024-010		PLATE, FOOT KE<C141>
5	87-054-087-010		BADGE, A1WA 40<C141>	17	84-LB2-020-010		PLATE, FOOT KE<C201>
6	84-LB3-053-010		BTN, POWER KE<C141>	18	84-LB3-022-010		GRILLE, SP L KE<C141>
6	84-LB2-016-010		BTN, POWER KE<C201>	19	84-LB3-023-010		GRILLE, SP R KE<C141>
7	84-LB3-216-010		HLDR, LED	A	87-067-761-010		BWT2<3-10 BLK
8	84-LB3-641-010		SP, F DIA 7.6<C141>	B	87-067-844-010		BWT2<4-16 BLK
8	84-LB2-625-010		SP, F DIA 7.6X12.6<C201>	C	87-078-126-010		S-SCREW ASSY, 5-25<C141>
9	84-LB3-044-010		PANEL, JACK	C	87-078-140-010		S-SCREW ASSY, 5-40<C201>
10	84-LB3-016-010		PLATE, JACK KE	D	87-067-941-010		NUT, 3/8-32UNF-2B
11	84-LB3-617-010		JACK, ANT PAL/PIN				
12	84-LB3-686-110		AC CORD SET, S				
13	84-LB3-601-010		CRT, A34KPU02XXA1<C141>				

ALTERNATION LIST

ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は"REFERENCE NAME LIST"を参照してください。
If can't understand for Description please kindly refer to "REFERENCENAMELIST".

REF.NO	PART NO.	カリ NO.	DESCRIPTION
MAIN C.B			
IC1	84-LB3-650-010		IC,TMP47C837N-U412
IC2	87-A20-213-010		IC,MN1380R
IC3	87-070-228-010		IC,93LC46
Q602	89-415-550-019		TR,2SD1555
C607	87-012-406-080		CAP,CER 2200P-2K BN <C201 KE1J>
C607	87-A10-028-019		CAP,CER 3300P-2K BN <C201 KEJ4>
R506	---		RES,9.1K <C201 KEJ4>
DL302	84-LB2-617-010		DELAY LINE,SD-10

NR C.B			
C554	87-018-122-089		CAP,TC-U 180P-50B
V551	84-LB2-604-010		CRT,510UFB22-TC67 <C201 KEJ4>
V551	84-LB2-603-010		CRT,A48QAD220X02T <C201 KE1J>

ACCESSORIES/PACKAGE LIST

DESCRIPTIONで判断できない物は"REFERENCE NAME LIST"を参照してください。
If can't understand for Description please kindly refer to "REFERENCENAMELIST".

REF.NO	PART NO.	カリ NO.	DESCRIPTION
1	84-LB3-918-010		IB,THAI(T-E) <C201 KEJ4>
1	84-LB3-917-010		IB,INDONESIA(LOCAL) <C201 KE1J>
2	84-LB3-958-010		ANT ASSY,ROD WIF2X4-800
3	84-LB2-005-010		COVER,JACK

サービス技術ニュース	
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